



EPIC-RPS7

EPIC Board

User's Manual 1st Ed

Copyright Notice

This document is copyrighted, 2025. All rights are reserved. The original manufacturer reserves the right to make improvements to the products described in this manual at any time without notice.

No part of this manual may be reproduced, copied, translated, or transmitted in any form or by any means without the prior written permission of the original manufacturer. Information provided in this manual is intended to be accurate and reliable. However, the original manufacturer assumes no responsibility for its use, or for any infringements upon the rights of third parties that may result from its use.

The material in this document is for product information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, AAEON assumes no liabilities resulting from errors or omissions in this document, or from the use of the information contained herein.

AAEON reserves the right to make changes in the product design without notice to its users.

Acknowledgement

All other products' name or trademarks are properties of their respective owners.

- Microsoft Windows is a registered trademark of Microsoft Corp.
- Intel® is a registered trademark of Intel Corporation
- Intel® Core™ is a trademark of Intel Corporation
- IBM, PC/AT, PS/2, and VGA are trademarks of International Business Machines Corporation.
- Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.
- Ubuntu and Canonical are registered trademarks of Canonical Ltd.
- Realtek is a trademark of Realtek Semiconductor Corporation.

All other product names or trademarks are properties of their respective owners. No ownership is implied or assumed for products, names or trademarks not herein listed by the publisher of this document.

Packing List

Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
● EPIC-RPS7	1
● CPU Cooler Bracket	2
● Screw Kit	1

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the product page on AAEON.com for the latest version of this document.

Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
7. Always disconnect this device from any AC supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls
12. Do not cover the openings on the device to ensure optimal heat dissipation.
13. Watch out for high temperatures when the system is running.
14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.

17. If any of the following situations arises, please the contact our service personnel:
 - i. Damaged power cord or plug
 - ii. Liquid intrusion to the device
 - iii. Exposure to moisture
 - iv. Device is not working as expected or in a manner as described in this manual
 - v. The device is dropped or damaged
 - vi. Any obvious signs of damage displayed on the device
18. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

FCC Statement

Warning!



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

AAEON 主板/子板/背板

QQ4-381 Rev.A2

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板 及其电子组件	×	○	○	○	○	○
外部信号 连接器及线材	×	○	○	○	○	○
本表格依据 SJ/T 11364 的规定编制。 ○：表示该有毒有害物质在该部件所有均质材料中的含量均在GB/T 26572标准规定的限量要求以下。 ×：表示该有害物质的某一均质材料超出了GB/T 26572的限量要求，然而该部件仍符合欧盟指令2011/65/EU 的规范。 环保使用期限(EFUP (Environmental Friendly Use Period))：10年 备注：此产品所标示之环保使用期限，系指在一般正常使用状况下。						

China RoHS Requirement (EN)

Name and content of hazardous substances in product

AAEON Main Board/Daughter Board/Backplane

QO4-381 Rev.A2

Part Name	Hazardous Substances					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
PCB Assemblies	×	○	○	○	○	○
Connector and Cable	×	○	○	○	○	○
The table is prepared in accordance with the provisions of SJ/T 11364. ○: Indicates that said hazardous substance contained in all of the homogenous materials for this product is below the limit requirement of GB/T 26572. ×: Indicates that said hazardous substance contained in at least one of the homogenous materials used for this part is above the limit requirement of GB/T 26572. But this product still be compliance with 2011/65/EU Directive (allowed with 2011/65/EU Annex III of RoHS exemption with number 6(c),7(a),7(c)-1). EFUP (Environment Friendly Use Period) value: 10 years Notes: This product defined period of use is under normal condition.						

Table of Contents

Chapter 1 - Product Specifications.....1

 1.1 Specifications..... 2

 1.2 Block Diagram..... 6

Chapter 2 – Hardware Information7

 2.1 Dimensions 8

 2.2 Jumpers and Connectors..... 9

 2.3 List of Jumpers10

 2.3.1 Clear CMOS Jumper (JP1) 11

 2.3.2 COM1 RI Function Selector (JP3)12

 2.3.3 COM2 RI Function Selector (JP4)13

 2.3.4 LVDS Power & LVDS BKLTL Power Selection (JP5)14

 2.3.5 LVDS Power & LVDS BKLTL Power Selection (JP5)16

 2.4 List of Connectors17

 2.4.1 External +5VSB Input (CN1).....19

 2.4.2 ATX 8-Pin DC Input Socket (CN2)20

 2.4.3 SATA Port (CN3)21

 2.4.4 SATA Power (CN4)22

 2.4.5 SATA Power (CN5)23

 2.4.6 SATA Port (CN6)24

 2.4.7 RTC Battery Connector (CN7)25

 2.4.8 LVDS Inverter/Backlight Connector (CN12).....26

 2.4.9 CPU Core Power Controller Firmware Update Header (CN13).....27

 2.4.10 USB 2.0 Connector (CN14)28

 2.4.11 Fan Connector (CN15)29

 2.4.12 GPIO Connector (CN16).....30

 2.4.13 USB 2.0 Connector (CN17).....31

2.4.14	USB 2.0 Connector (CN18).....	32
2.4.15	USB 2.0 Connector (CN19).....	33
2.4.16	Dual USB 3.2 Gen 1 Port (CN20)	34
2.4.17	Dual USB 3.2 Gen 2 Port (CN21)	36
2.4.18	Front Panel (CN22).....	37
2.4.19	Display Port (CN23).....	39
2.4.20	LVDS Connector (CN24)	40
2.4.21	VGA Connector (CN25).....	42
2.4.22	SMBus/I2C Connector (CN26)	43
2.4.23	SPI Flash Programming Connector (CN27)	44
2.4.24	M.2 E-Key (CN28)	45
2.4.25	Nano SIM Slot (CN29)	48
2.4.26	Port 80 Debug Port (CN30).....	49
2.4.27	Mini Card/mSATA Slot (CN31)	50
2.4.28	M.2 M-Key (CN32).....	52
2.4.29	Dual RJ-45 Port (CN33).....	55
2.4.30	Dual COM Port Connector (RS-232/422/285) (CN34)	56
2.4.31	Dual COM Port Connector (RS-232 only) (CN35)	58
2.5	CPU Cooler Installation	60
Chapter 3 - AMI BIOS Setup		62
3.1	System Test and Initialization	63
3.2	AMI BIOS Setup	64
3.3	Setup Submenu: Main.....	65
3.4	Setup Submenu: Advanced.....	66
3.4.1	CPU Configuration	67
3.4.2	PCH-FW Configuration	68
3.4.3	Firmware Update Configuration.....	69
3.4.4	PTT Configuration	70

3.4.5	Trusted Computing.....	71
3.4.6	SATA Configuration	73
3.4.7	Hardware Monitor	74
3.4.7.1	Smart Fan Mode Configuration	75
3.4.8	SIO Configuration.....	76
3.4.8.1	Serial Port 1 Configuration.....	77
3.4.8.2	Serial Port 2 Configuration.....	78
3.4.8.3	Serial Port 3 Configuration.....	79
3.4.8.4	Serial Port 4 Configuration.....	80
3.4.9	Serial Port Console Redirection	81
3.4.10	Legacy Console Redirection Settings	82
3.4.11	AAEON BIOS Robot.....	83
3.4.12	Power Management.....	85
3.4.13	GPIO Port Configuration.....	86
3.4.14	AAEON Smart Boost.....	87
3.5	Setup Submenu: Chipset	88
3.5.1	System Agent (SA) Configuration	89
3.5.2	Memory Configuration.....	90
3.5.3	LVDS Panel Configuration.....	91
3.5.4	PCH-IO Configuration.....	93
3.5.5	PCIe Slot M.2 2280 M-Key (CN32).....	94
3.5.6	NVMe Configuration.....	95
3.6	Setup Submenu: Security.....	96
3.6.1	Secure Boot.....	97
3.6.2	Key Management	98
3.7	Setup Submenu: Boot	100
3.8	Setup Submenu: Save & Exit.....	101

Chapter 4 – Drivers Installation.....	102
--	------------

4.1 Drivers Download and Installation.....	103
Appendix A – I/O Information	105
A.1 I/O Address Map	106
A.2 Memory Address Map	113
A.3 IRQ Mapping Chart.....	119
Appendix B – Mating Connectors	132
B.1 List of Mating Connectors and Cables.....	133
Appendix C – 3-Pin ATX Behavior Description	134
C.1 3-Pin ATX Behavior Description	135
C.2 ATX Power Table	138

Chapter 1

Product Specifications

1.1 Specifications

System	
Form Factor	4" EPIC Board
CPU	14th Generation Intel® Core™ Processor (up to 35W/65W)
	13th Generation Intel® Core™ Processor (up to 35W/65W)
	12th Generation Intel® Core™ Processor (up to 35W/65W)
Chipset	Intel® H610E Chipset
Memory Type	DDR5 4800/5200 Dual-Channel SODIMM x 2, up to 64GB (Note: DDR Speed is dependent on CPU SKU)
BIOS	UEFI
Wake on LAN	Yes
Watchdog Timer	255 Levels
Security	TPM 2.0 (Optional)
RTC Battery	Lithium Battery 3V/240mAh
Dimensions	4.53" x 6.50" (115mm x 165mm)
OS Support	Windows® 10/11 (64-bit)
	Ubuntu 22.04.2/Kernel 5.19.0-32-generic x86_64
Power	

Power Requirement	DC 19Vin ~ 24Vin
	DC 12Vin
	(Note: For stable performance, it is recommended to use a power supply unit rated at 22A @12V DC output to accommodate potential maximum peak power requirements.)
Power Supply Type	AT/ATX
Connector	8-Pin Connector

Power

Power Consumption	Intel® Core™ i9-13900E, DDR5 32GB x 2, 7.73A @+12V (Typical)
	Intel® Core™ i9-13900E, DDR5 32GB x 2, 21.39A @+12V (Max)

Display

Controller	Intel® UHD Graphics 770 (i5 SKU and above)
	Intel® UHD Graphics 730 (i3 SKU)
	Intel® UHD Graphics 710 (Intel® Celeron® Processor G6900TE SKU)
LVDS/eDP	Dual-Channel 18/24bit LVDS x 1
Display Interface	DP 1.2 x 1, up to 3840 x 2160 @60Hz
	VGA x 1, up to 1920 x 1080
Multiple Display	Up to 3 Simultaneous Displays

Audio

Codec	-
Audio Interface	-
Speaker	-

External I/O

Ethernet	Intel® Ethernet Controller I226, 2.5GbE RJ-45 x 1
	Intel® Ethernet Connection I219, GbE RJ-45 x 1
USB	USB 3.2 Gen 2 (Type-A) x 2
	USB3.2 Gen 1 (Type-A) x 2
Serial Port	-
Video	DP 1.2 x 1

Internal I/O

USB	USB 2.0 x 4 (Pin Header)
Serial Port	RS-232/422/285 x 2
	RS-232 x 2 (Pin Header)
Video	VGA x 1
	LVDS x 1
SATA	SATA 6Gb/s x 2
	+5V SATA Power Connector x 2
Audio	-
DIO/GPIO	8-bit
SMBus/I2C	SMBus/I2C
Touch	-
Fan	4-pin Smart Fan
SIM	-
Front Panel	Power Button, Reset Button, Power LED, SATA LED, Buzzer
Others	-

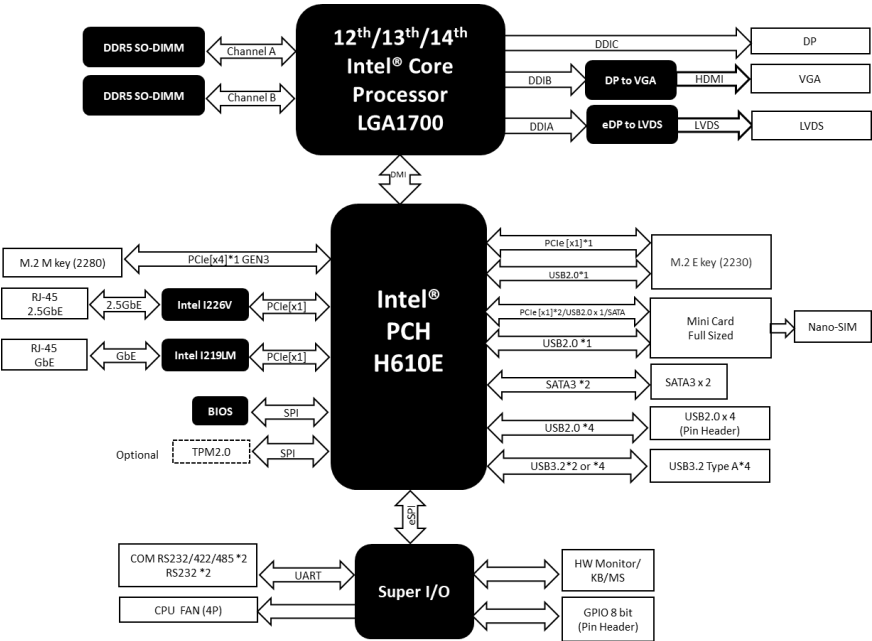
Expansion

Mini PCIe/mSATA	Full-size mSATA/Mini Card (Default: Mini PCIe, SATA configuration subject to BOM change)
M.2	M.2 2280 M-Key x 1 (PCIe 3.0 [x4])
	M.2 2230 E-Key x 1 (PCIe 3.0 [x1] + USB 2.0)
Others	-

Environmental

Operating Temperature	32°F ~ 140°F (0°C ~ 60°C) (Note: To achieve the best performance, keeping the EPIC-RPS7 operating with 0.5m/sec airflow with DDR5 SODIMM 1 installed on bottom side is recommended)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	353,666
EMC	CE/FCC Class A

1.2 Block Diagram

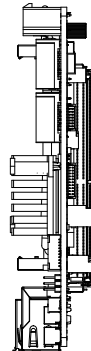
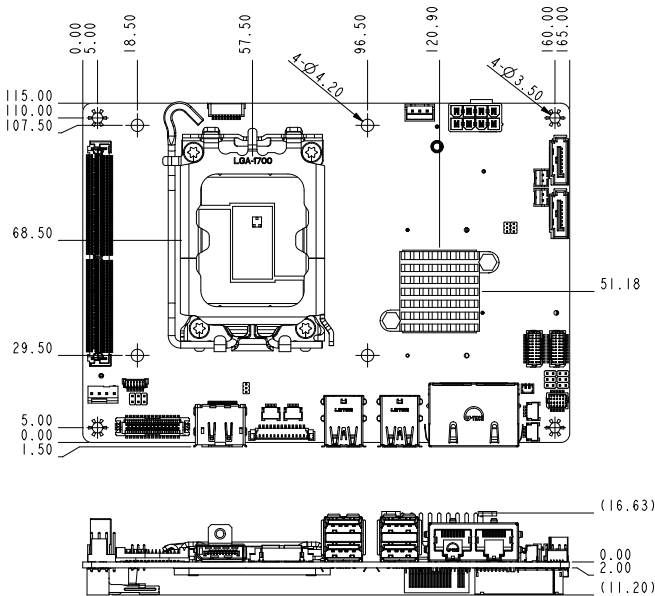


Chapter 2

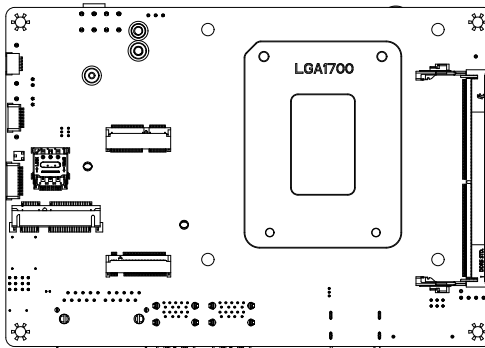
Hardware Information

2.1 Dimensions

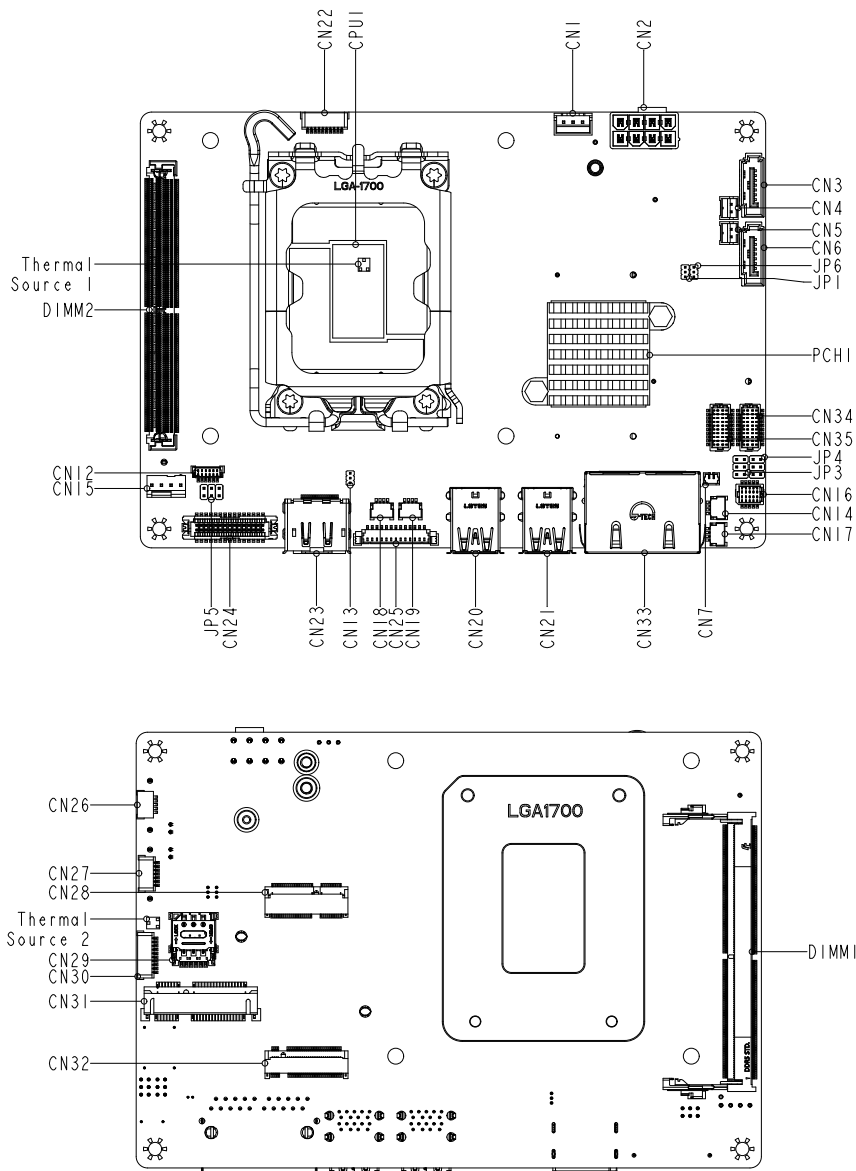
Top Side



Bottom Side



2.2 Jumpers and Connectors

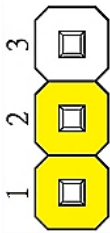
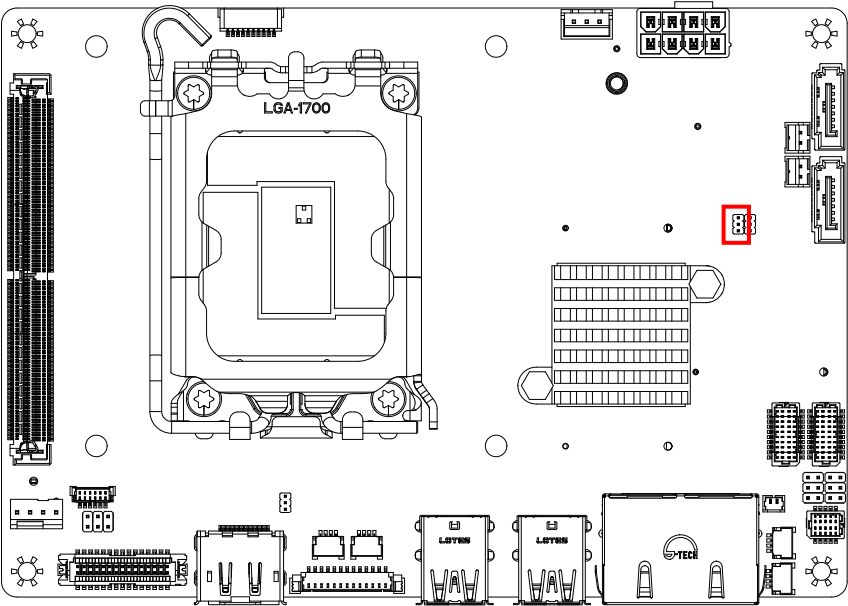


2.3 List of Jumpers

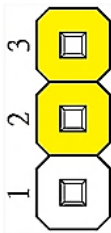
The board features a number of jumpers which can be configured for your application. Please refer to the table below and following sections for all jumpers which can be configured.

Label	Function
JP1	Clear CMOS Jumper
JP3	COM1 RI Function Selector
JP4	COM2 RI Function Selector
JP5	LVDS Power & LVDS BKLT Power Selection
JP6	Auto-Power Button Selection

2.3.1 Clear CMOS Jumper (JP1)



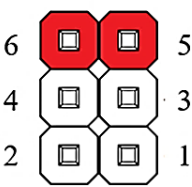
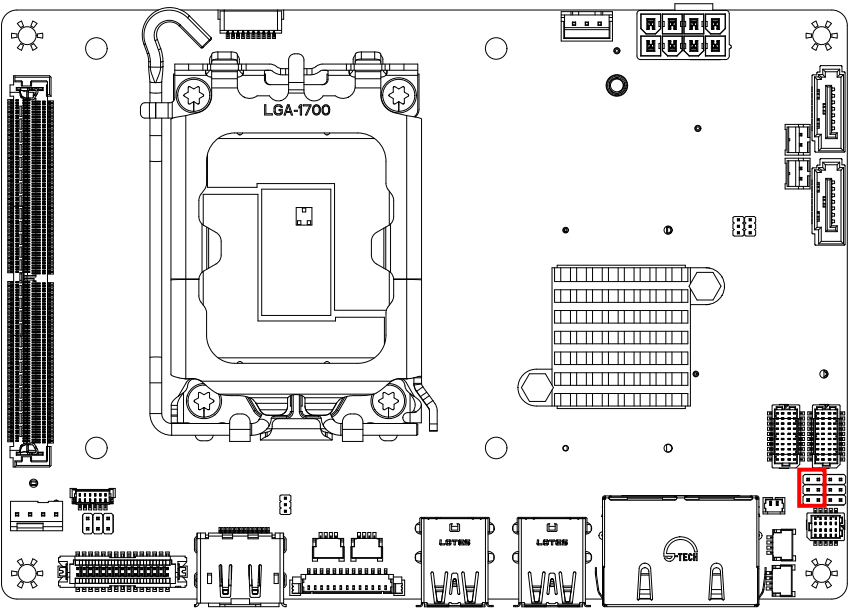
Normal (Default)



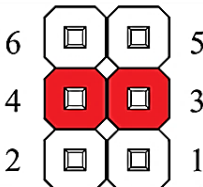
Clear CMOS

Clear CMOS Jumper		
1-2	Normal	Default
2-3	Clear CMOS	

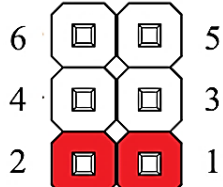
2.3.2 COM1 RI Function Selector (JP3)



+12V



Ring (Default)

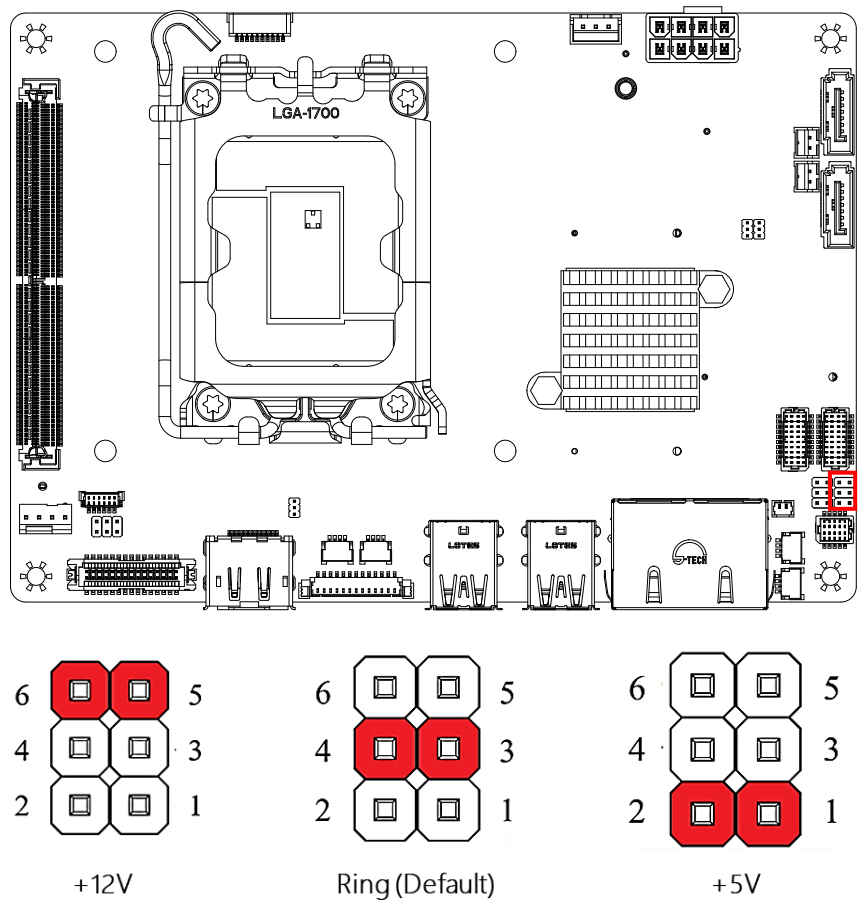


+5V

COM1 RI Function Selector

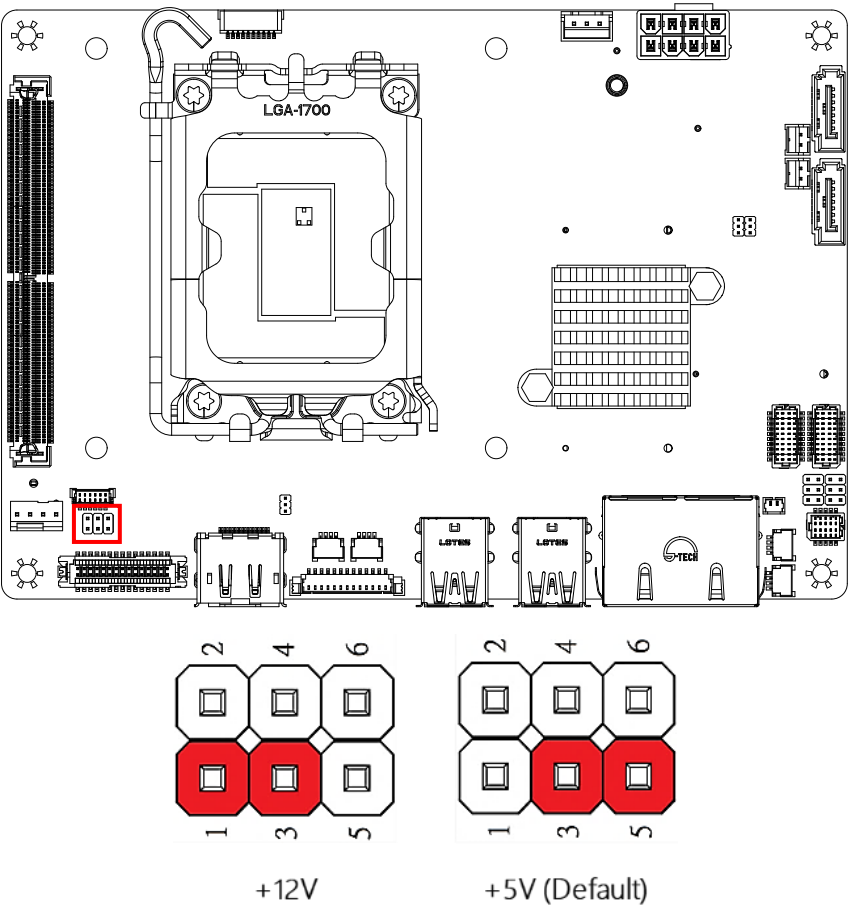
1-2	+12V	
3-4	RI	Default
5-6	+5V	

2.3.3 COM2 RI Function Selector (JP4)



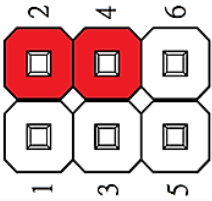
COM2 RI Function Selector		
1-2	+12V	
3-4	RI	Default
5-6	+5V	

2.3.4 LVDS Power & LVDS BKLT Power Selection (JP5)

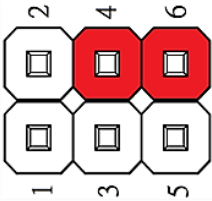


BKLT Power Selection

1-3	+12V	
3-5	+5V	Default



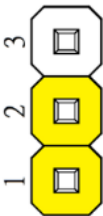
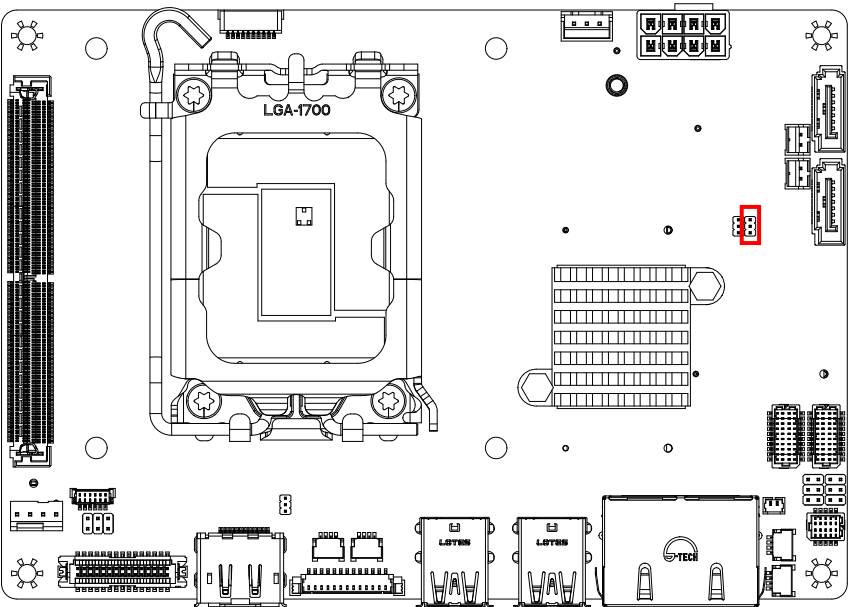
+3.3V (Default)



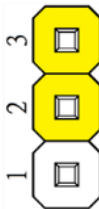
+5V

LVDS Power Selection		
2-4	+3.3V	Default
4-6	+5V	

2.3.5 LVDS Power & LVDS BKLT Power Selection (JP5)



Disable



Enable (Default)

Auto-Power Button Selection

1-2	Disable	
2-3	Enable	Default

2.4 List of Connectors

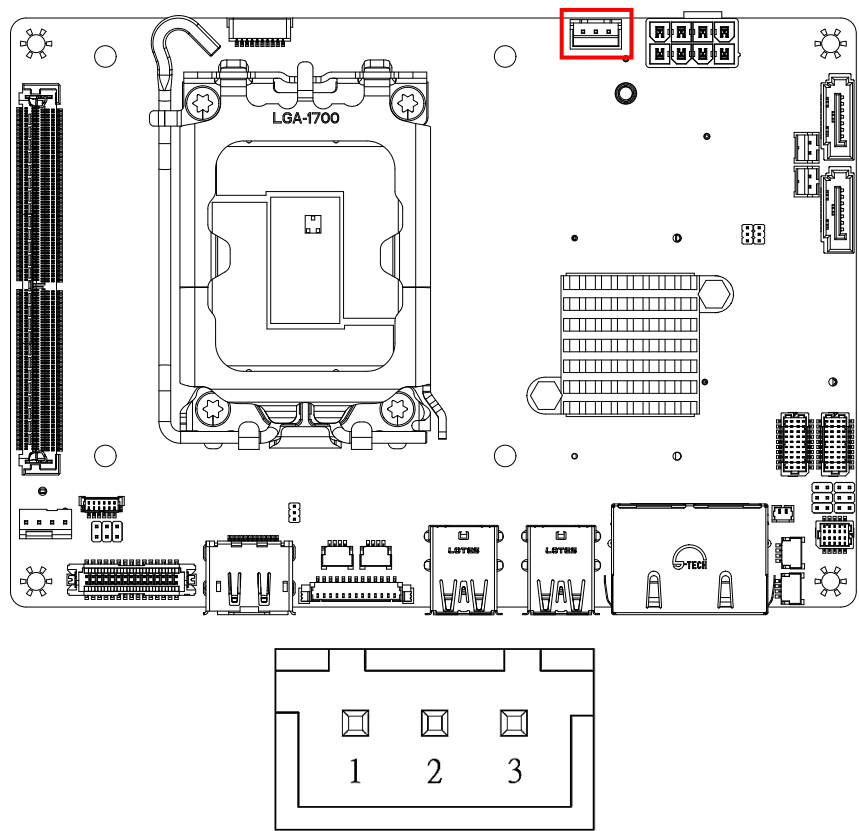
This section details the connectors featured on the board, which can be configured for your application. For a list of mating connectors and cables, please see Appendix C. For Electrical Specifications of I/O Ports, please see Appendix D.

Please refer to the table below for a list of all connectors on this board which can be configured.

Label	Function
CN1	External +5VSB Input
CN2	ATX 8-Pin DC Input Socket
CN3	SATA Port
CN4	SATA Power
CN5	SATA Power
CN6	SATA Port
CN7	RTC Battery Connector
CN12	LVDS Inverter/Backlight Connector
CN13	CPU Core Power Controller Firmware Update Header (Factory use only)
CN14	USB 2.0 Connector
CN15	Fan Connector
CN16	GPIO Connector
CN17	USB 2.0 Connector
CN18	USB 2.0 Connector
CN19	USB 2.0 Connector
CN20	Dual USB 3.2 Gen 1 Port
CN21	Dual USB 3.2 Gen 2 Port
CN22	Front Panel
CN23	Display Port
CN24	LVDS Connector
CN25	VGA Connector
CN26	SMBus/I2C Connector
CN27	SPI Flash Programming Connector
CN28	M.2 E-Key
CN29	Nano SIM Connector
CN30	Port 80 Debug Port
CN31	Mini Card/mSATA
CN32	M.2 M-Key
CN33	Dual RJ-45 Port (Left: 2.5GbE, Right: 1GbE)

Label	Function
CN34	Dual COM Port Connector (RS-232/422/285)
CN35	Dual COM Port Connector (RS-232 only)

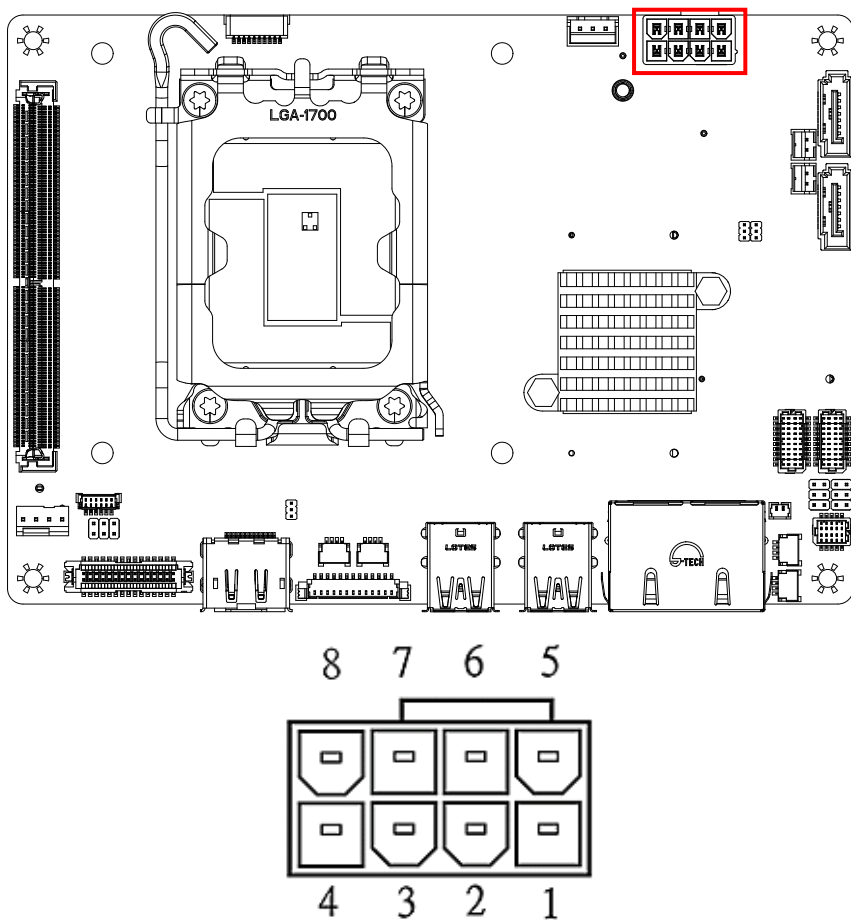
2.4.1 External +5VSB Input (CN1)



Pin	Pin Name	Signal Type	Signal Level
1	PS_ON#	OUT	
2	GND	GND	GND
3	+5VSB	PWR	+5V

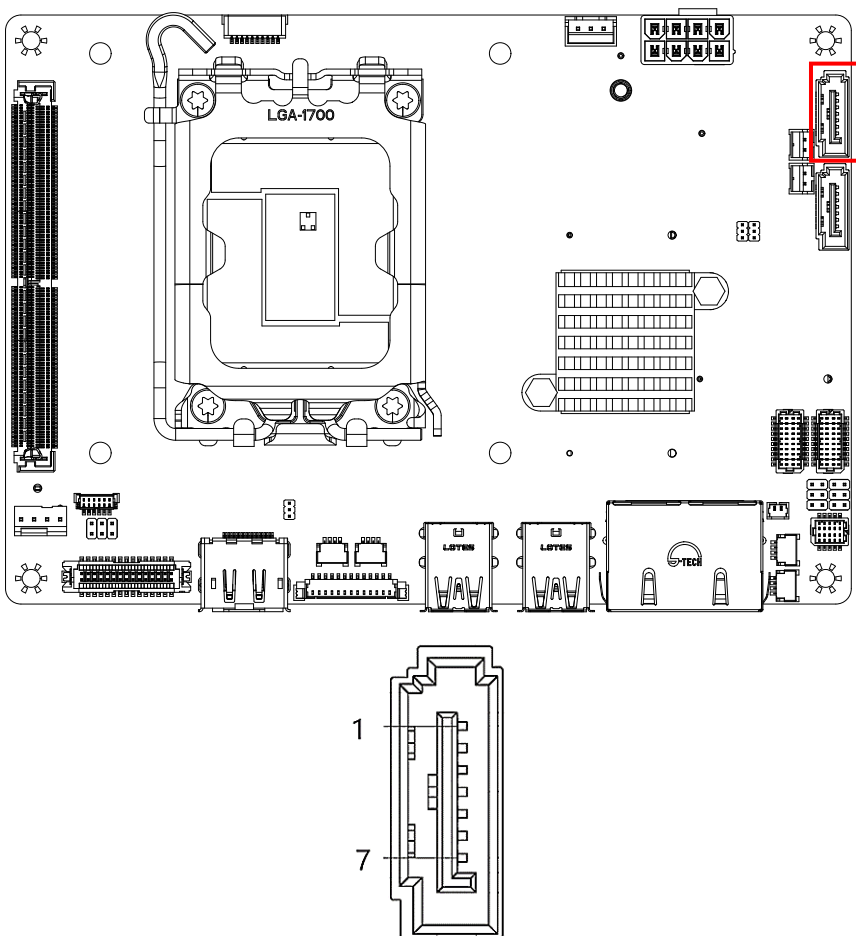
Note: The driving current of +5VSB supports up to 2.5A.

2.4.2 ATX 8-Pin DC Input Socket (CN2)



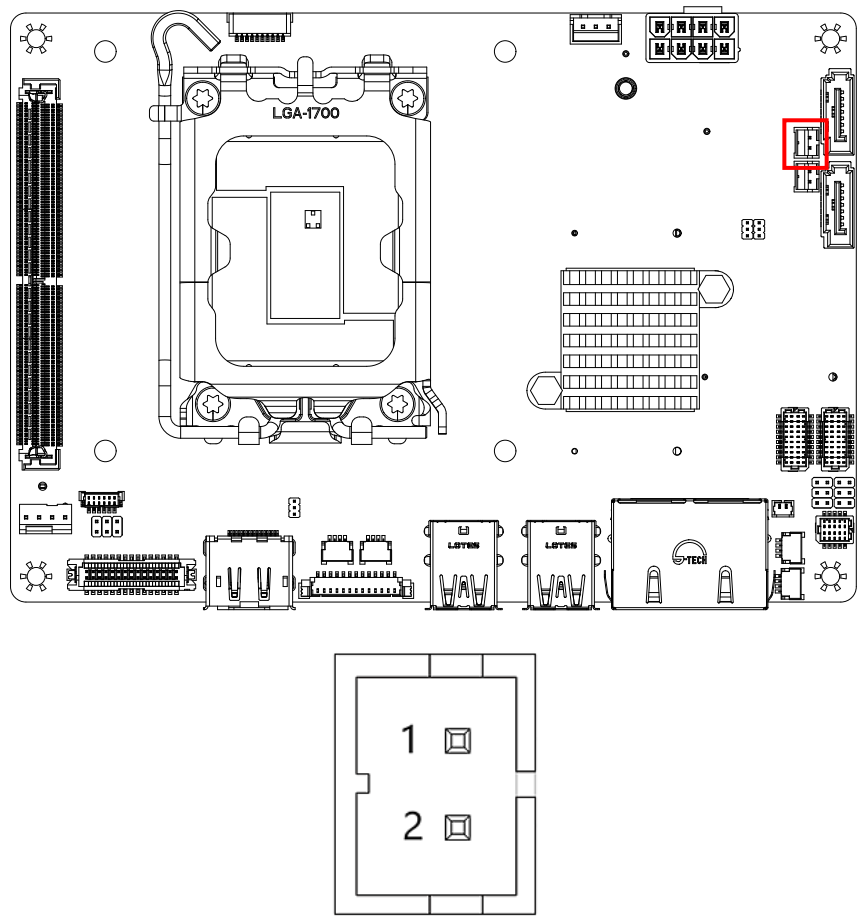
Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	GND	GND	GND
3	GND	GND	GND
4	GND	GND	GND
5	DC_IN	PWR	
6	DC_IN	PWR	
7	DC_IN	PWR	
8	DC_IN	PWR	

2.4.3 SATA Port (CN3)



Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	SATA_TXP	DIFF	-
3	SATA_TXN	DIFF	-
4	GND	GND	GND
5	SATA_RXN	DIFF	-
6	SATA_RXP	DIFF	-
7	GND	GND	GND

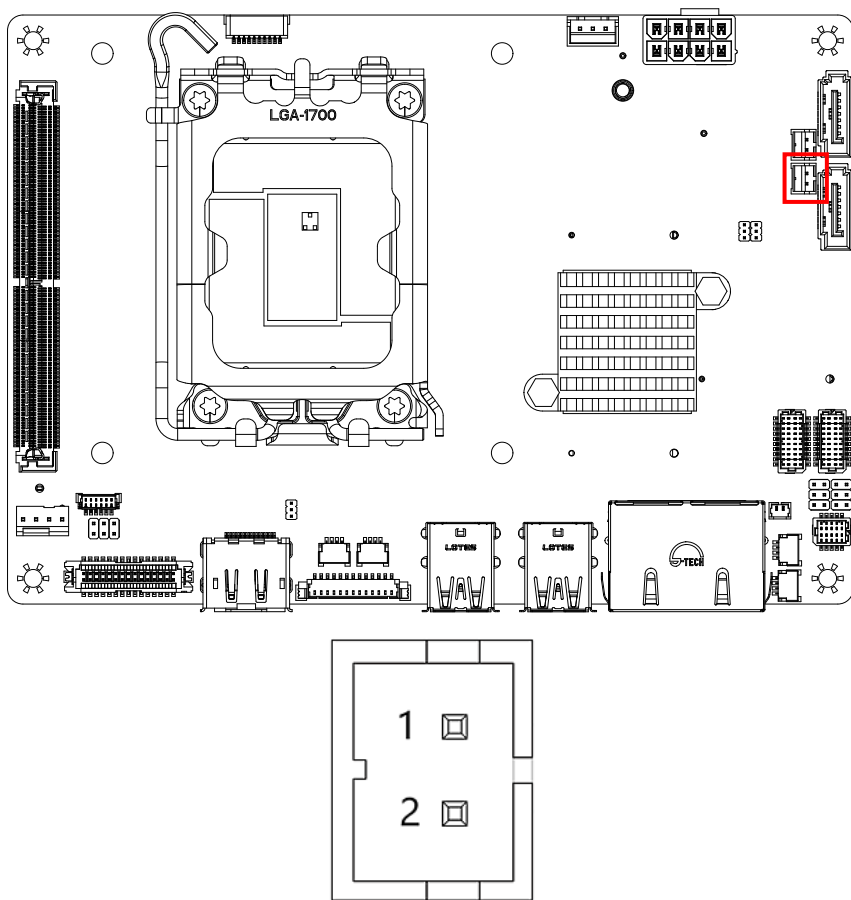
2.4.4 SATA Power (CN4)



Pin	Pin Name	Signal Type	Signal Level
1	+V5S	PWR	+5V
2	GND	GND	GND

Note: The driving current of +V5S supports up to 2A.

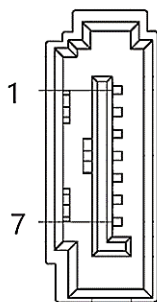
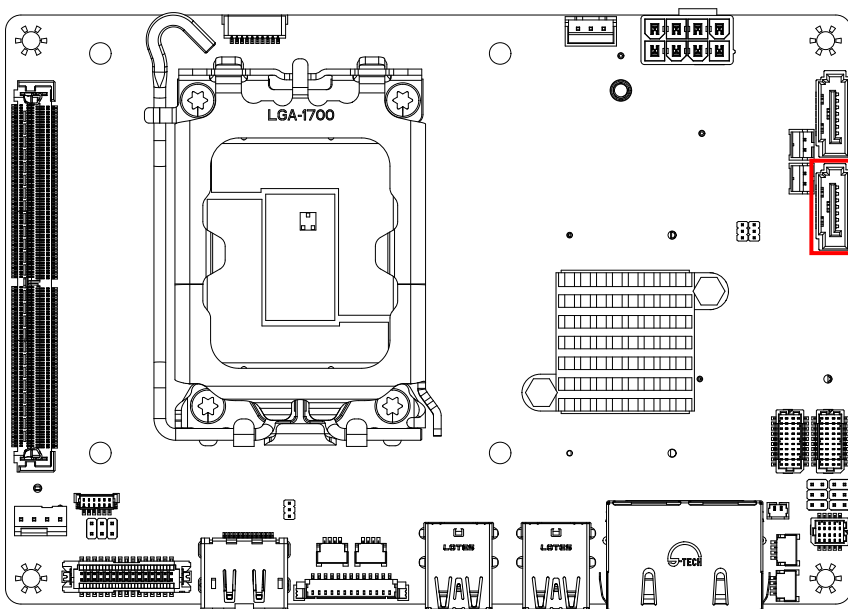
2.4.5 SATA Power (CN5)



Pin	Pin Name	Signal Type	Signal Level
1	+V5S	PWR	+5V
2	GND	GND	GND

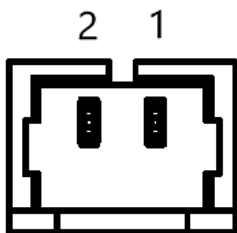
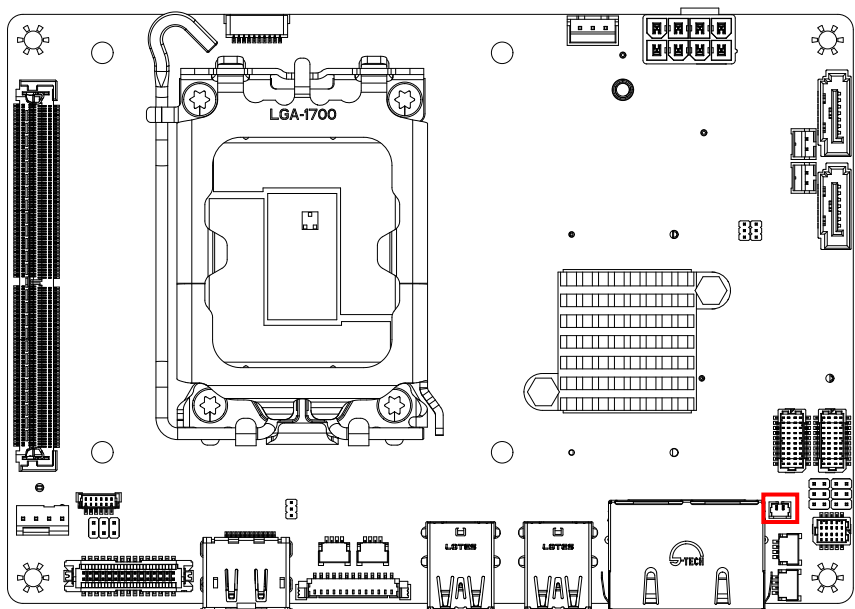
Note: The driving current of +V5S supports up to 2A.

2.4.6 SATA Port (CN6)



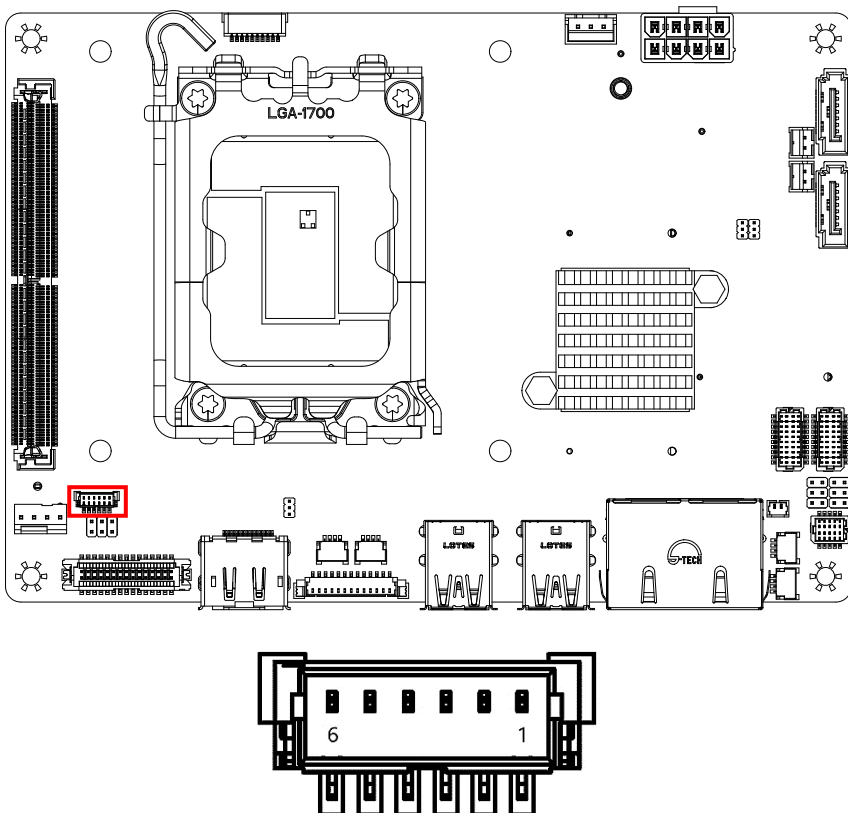
Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	SATA_TXP	DIFF	-
3	SATA_TXN	DIFF	-
4	GND	GND	GND
5	SATA_RXN	DIFF	-
6	SATA_RXP	DIFF	-
7	GND	GND	GND

2.4.7 RTC Battery Connector (CN7)



Pin	Pin Name	Signal Type	Signal Level
1	+3.3V	PWR	+3.3V
2	GND	GND	GND

2.4.8 LVDS Inverter/Backlight Connector (CN12)

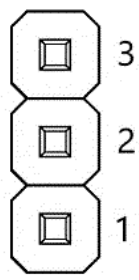
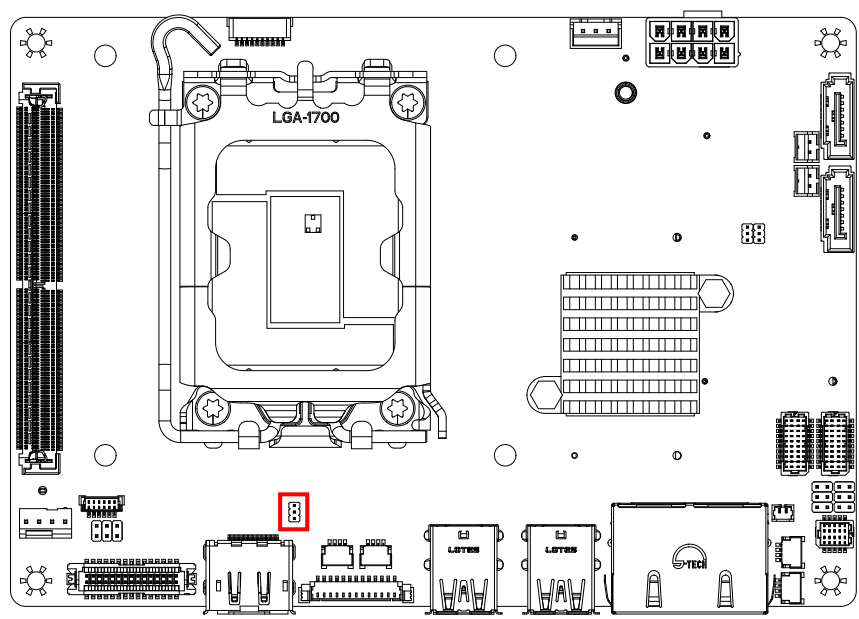


Pin	Pin Name	Signal Type	Signal Level
1	BKL_PWR	PWR	+5V(Default)/+12V
2	BKL_PWR	PWR	+5V(Default)/+12V
3	BKL_CONTROL	OUT	-
4	GND	GND	GND
5	GND	GND	GND
6	BKL_ENABLE	OUT	+3.3V

Note: LVDS/BKL_PWR can be set to +12V or +5V by JP5.

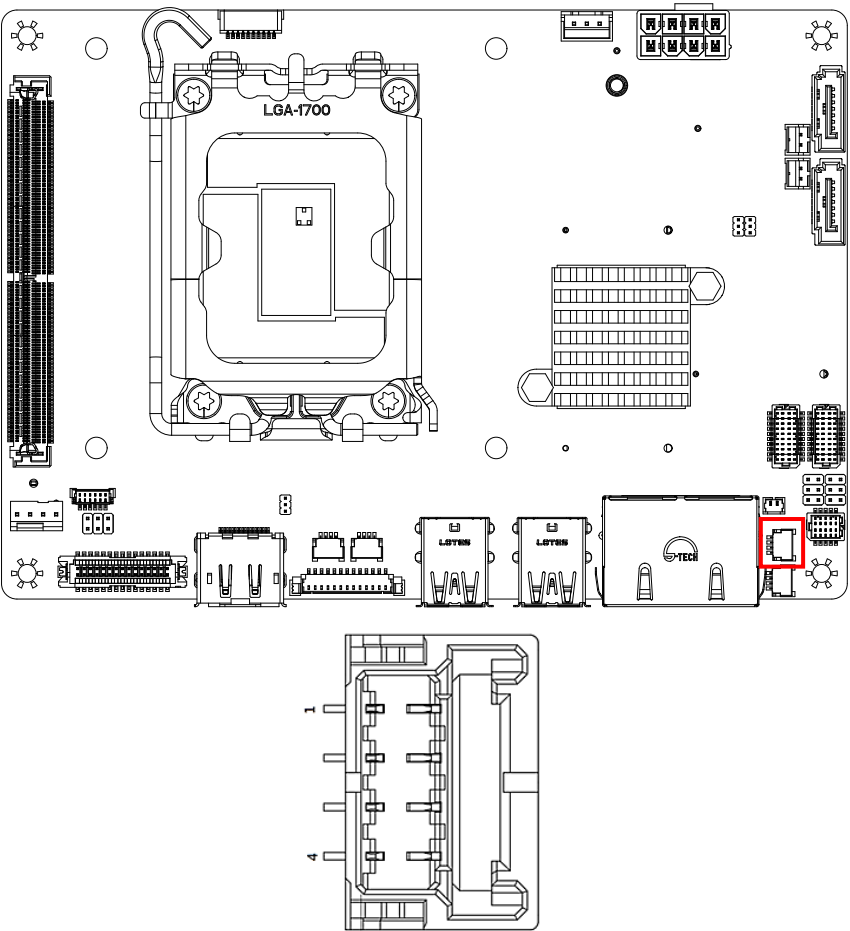
Note: The driving current of BKL_PWR supports up to 2A.

2.4.9 CPU Core Power Controller Firmware Update Header (CN13)



Pin	Pin Name	Signal Type	Signal Level
1	VR_SCL	IN	+3.3V
2	VR_SDA	IN/OUT	+3.3V
3	GND	GND	GND

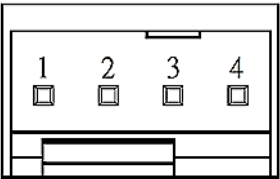
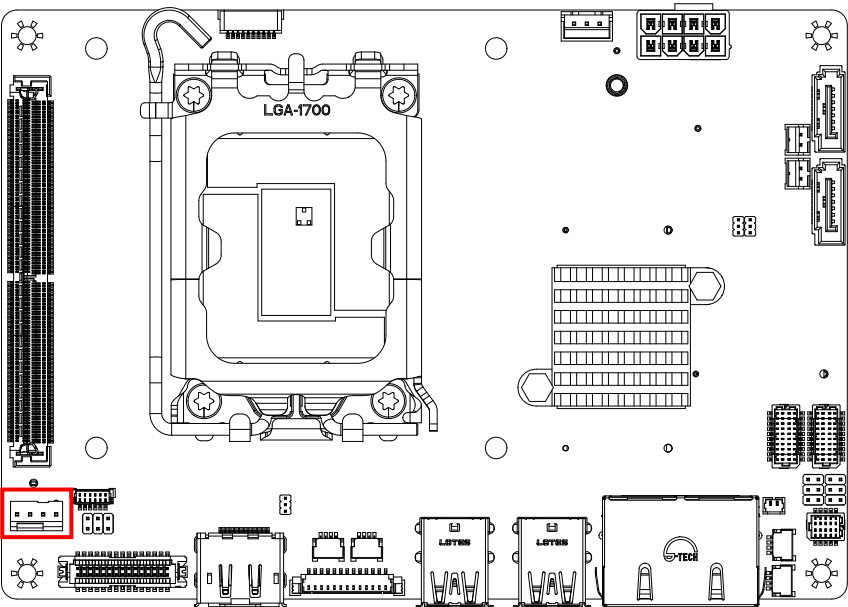
2.4.10 USB 2.0 Connector (CN14)



Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5V
2	USB2_DN	DIFF	-
3	USB2_DP	DIFF	-
4	GND	GND	GND

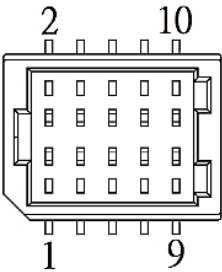
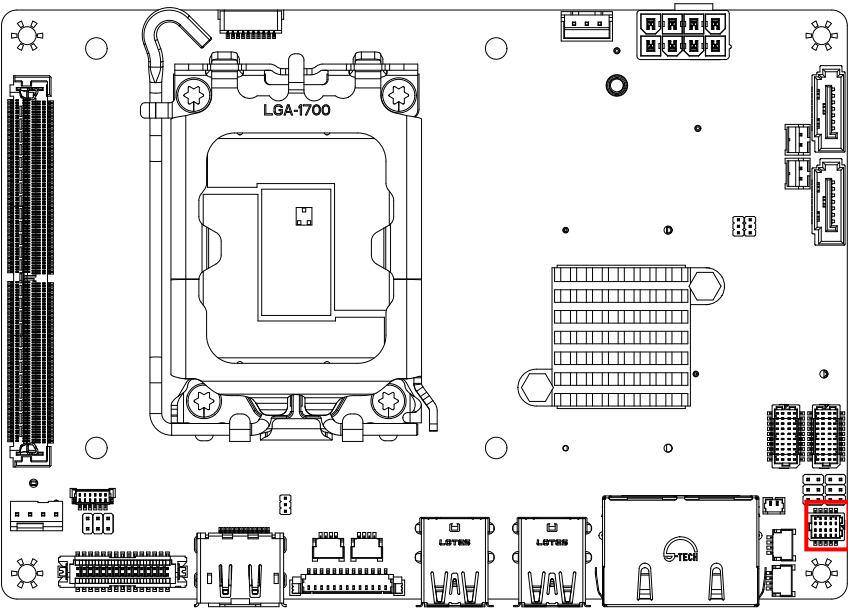
Note: The driving current of +5VSB supports up to 0.5A/Port.

2.4.11 Fan Connector (CN15)



Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	FAN_POWER	PWR	+12V
3	FAN_TAC	IN	-
4	FAN_CTL	OUT	-

2.4.12 GPIO Connector (CN16)

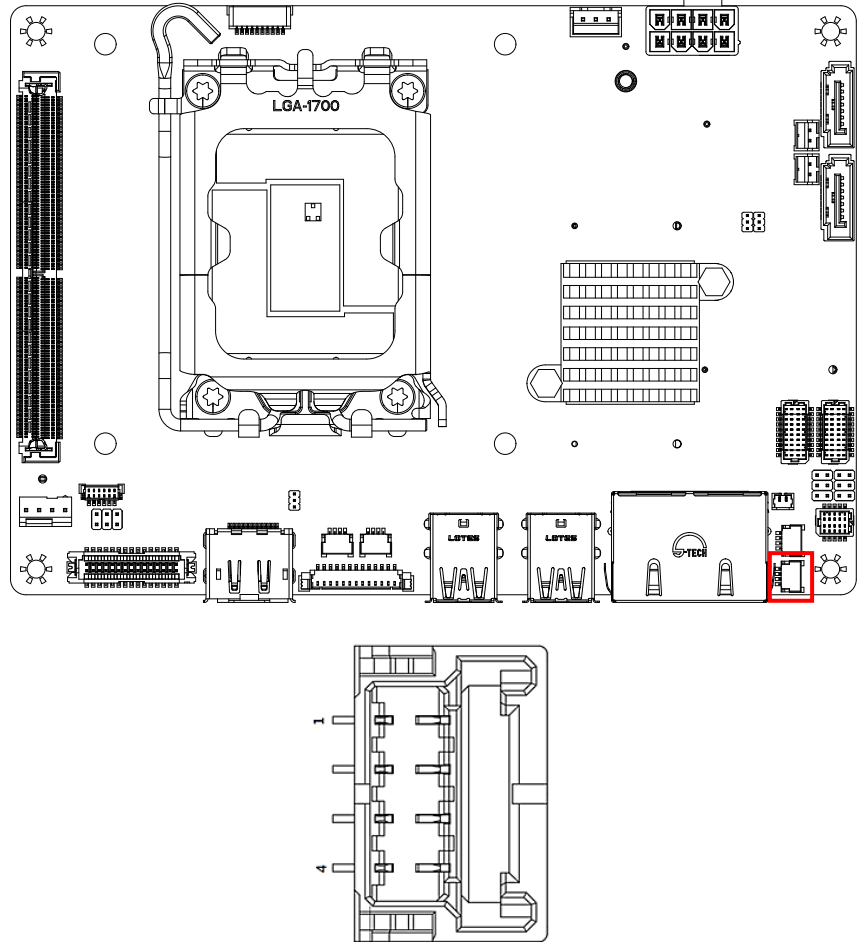


Pin	Pin Name	Signal Type	Signal Level
1	GPIO_0	IN/OUT	-
2	GPIO_1	IN/OUT	-
3	GPIO_2	IN/OUT	-
4	GPIO_3	IN/OUT	-
5	GPIO_4	IN/OUT	-
6	GPIO_5	IN/OUT	-
7	GPIO_6	IN/OUT	-
8	GPIO_7	IN/OUT	-
9	+V5S	PWR	+5V

Pin	Pin Name	Signal Type	Signal Level
10	GND	GND	GND

Note: The driving current of +V5S supports up to 0.5A.

2.4.13 USB 2.0 Connector (CN17)

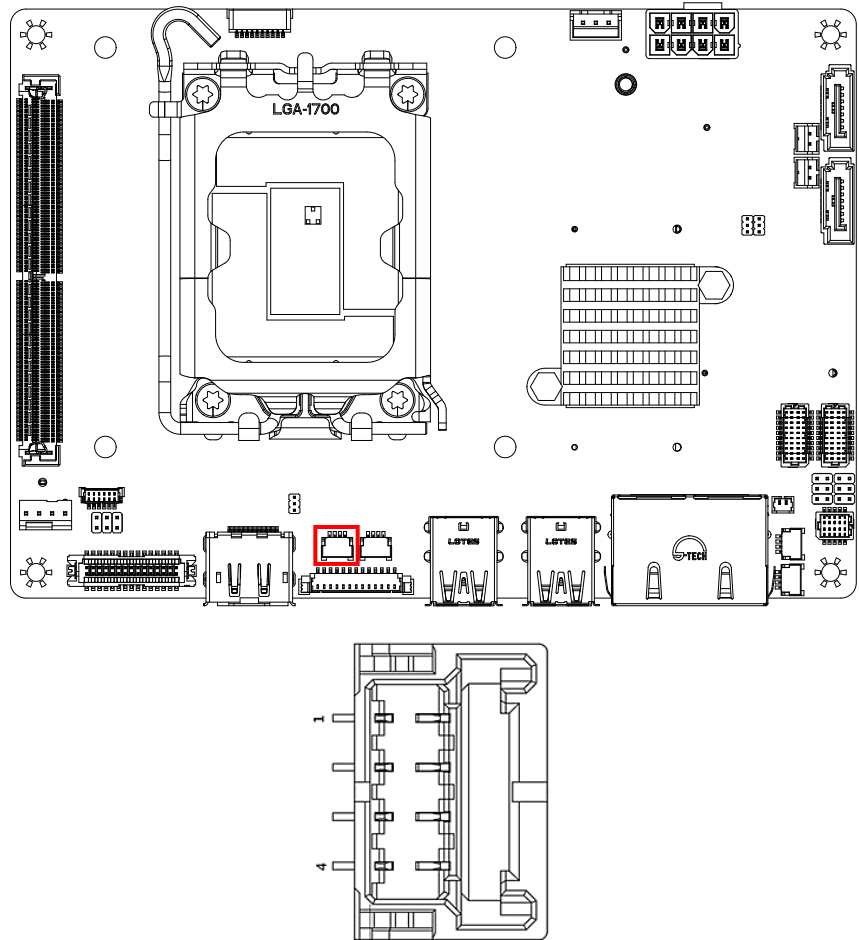


Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5V
2	USB2_DN	DIFF	-
3	USB2_DP	DIFF	-

Pin	Pin Name	Signal Type	Signal Level
4	GND	GND	GND

Note: The driving current of +5VSB supports up to 0.5A/Port.

2.4.14 USB 2.0 Connector (CN18)

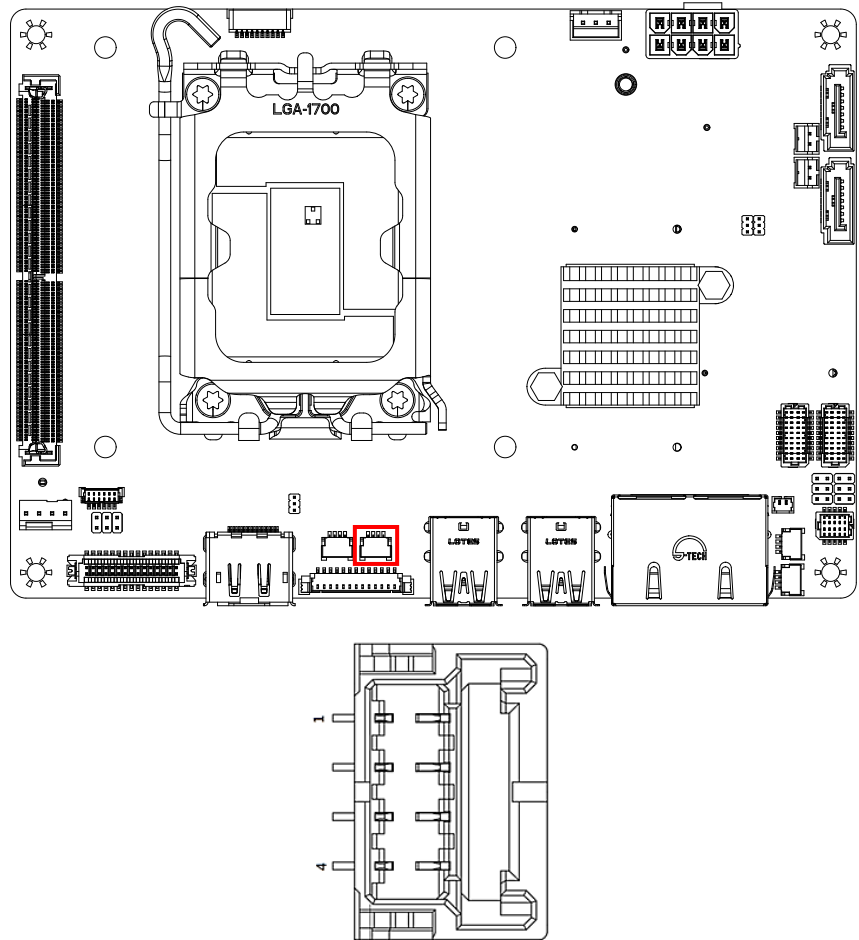


Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5V
2	USB2_DN	DIFF	-
3	USB2_DP	DIFF	-

Pin	Pin Name	Signal Type	Signal Level
4	GND	GND	GND

Note: The driving current of +5VSB supports up to 0.5A/Port.

2.4.15 USB 2.0 Connector (CN19)

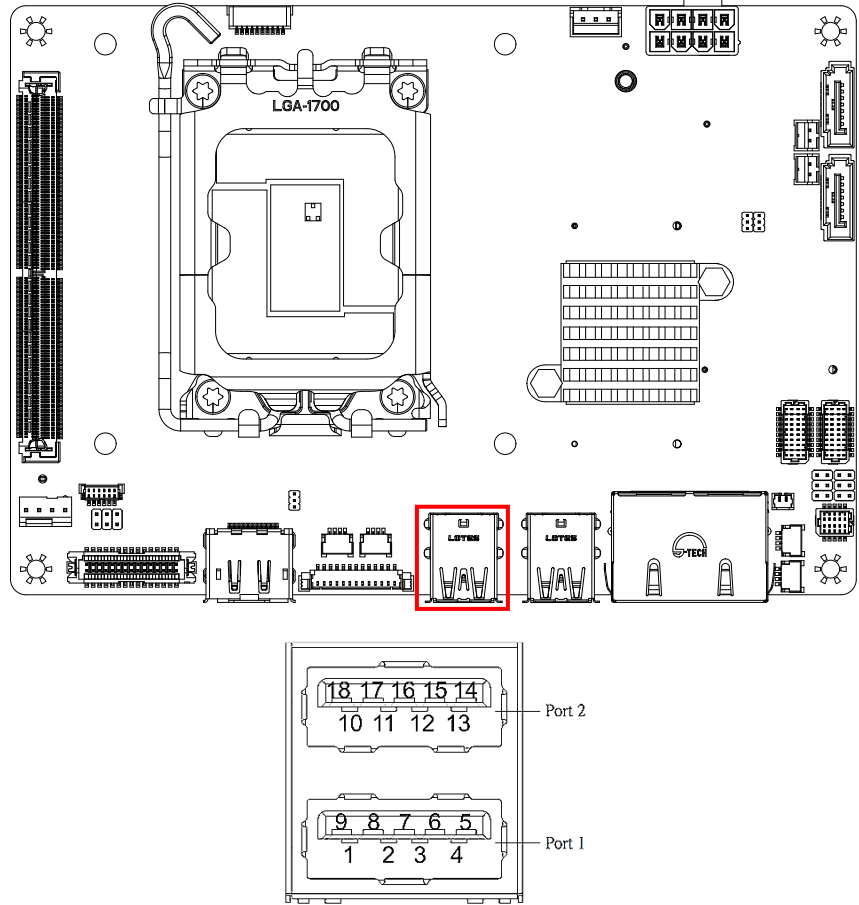


Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5V
2	USB2_DN	DIFF	-
3	USB2_DP	DIFF	-

Pin	Pin Name	Signal Type	Signal Level
4	GND	GND	GND

Note: The driving current of +5VSB supports up to 0.5A/Port.

2.4.16 Dual USB 3.2 Gen 1 Port (CN20)

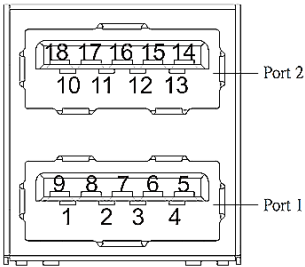
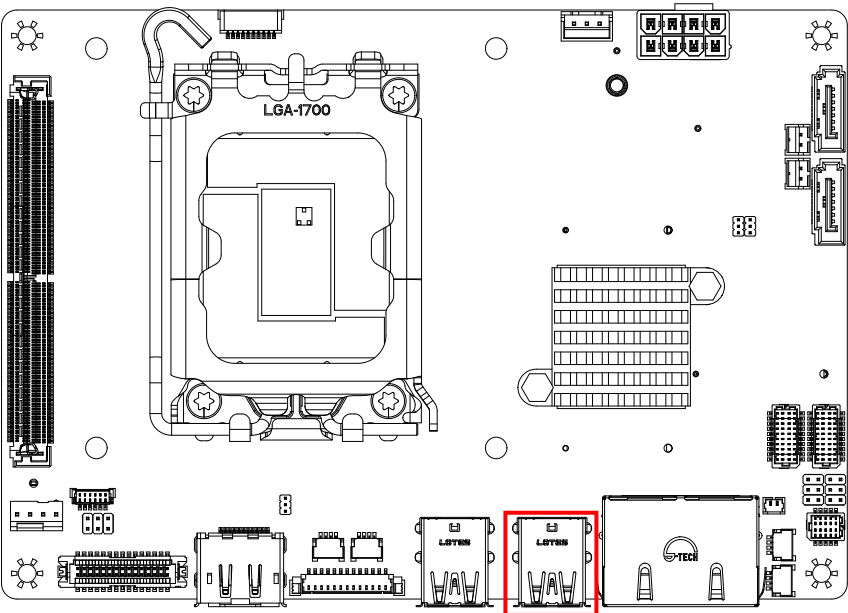


Pin	Pin Name	Signal Type	Pin	Pin Name	Signal Type
1	+5VSB	PWR	+5V	MIC_L	IN
2	USB2_1_DN	DIFF	-	MIC_R	IN
3	USB2_1_DP	DIFF	-	JD_MIC	IN
4	GND	GND	GND	AUD_GND	GND

Pin	Pin Name	Signal Type	Pin	Pin Name	Signal Type
5	USB3_1_RXN	DIFF	-	LIN_R	IN
6	USB3_1_RXP	DIFF	-	LIN_L	IN
7	GND	GND	GND		
8	USB3_1_TXN	DIFF	-		
9	USB3_1_TXP	DIFF	-		
10	+5VSB	PWR	+5V		
11	USB2_2_DN	DIFF	-		
12	USB2_2_DP	DIFF	-		
13	GND	GND	GND		
14	USB3_2_RXN	DIFF	-		
15	USB3_2_RXP	DIFF	-		
16	GND	GND	GND		
17	USB3_2_TXN	DIFF	-		
18	USB3_2_TXP	DIFF	-		

Note: The driving current of +5VSB supports up to 0.9A/Port.

2.4.17 Dual USB 3.2 Gen 2 Port (CN21)

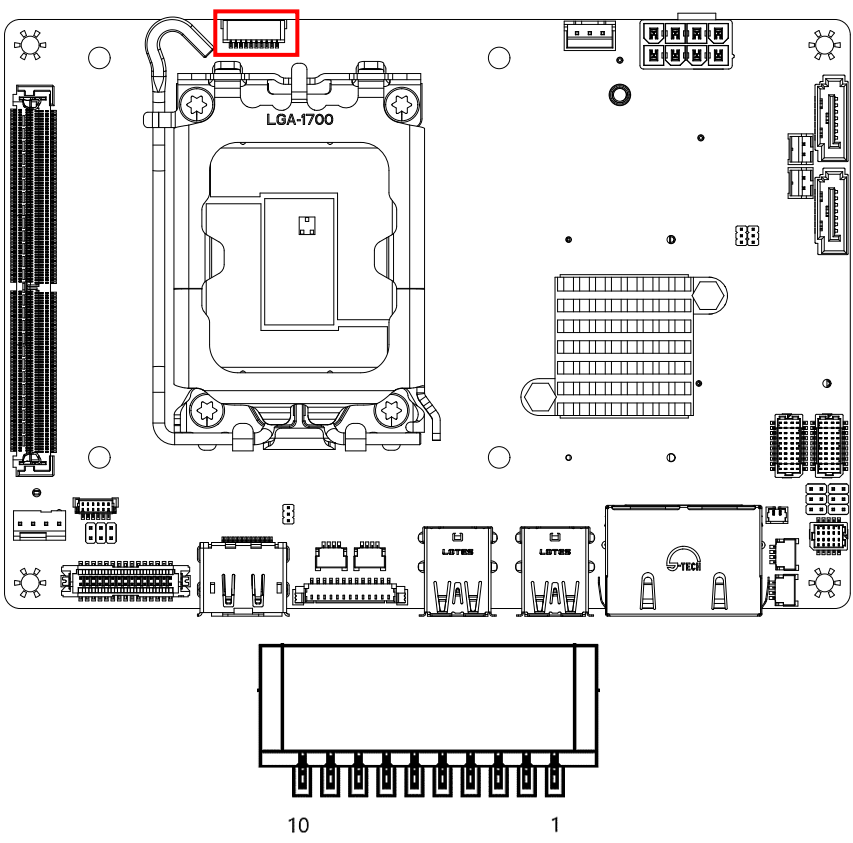


Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5V
2	USB2_1_DN	DIFF	-
3	USB2_1_DP	DIFF	-
4	GND	GND	GND
5	USB3_1_RXN	DIFF	-
6	USB3_1_RXP	DIFF	-
7	GND	GND	GND
8	USB3_1_TXN	DIFF	-
9	USB3_1_TXP	DIFF	-

Pin	Pin Name	Signal Type	Signal Level
10	+5VSB	PWR	+5V
11	USB2_2_DN	DIFF	-
12	USB2_2_DP	DIFF	-
13	GND	GND	GND
14	USB3_2_RXN	DIFF	-
15	USB3_2_RXP	DIFF	-
16	GND	GND	GND
17	USB3_2_TXN	DIFF	-
18	USB3_2_TXP	DIFF	-

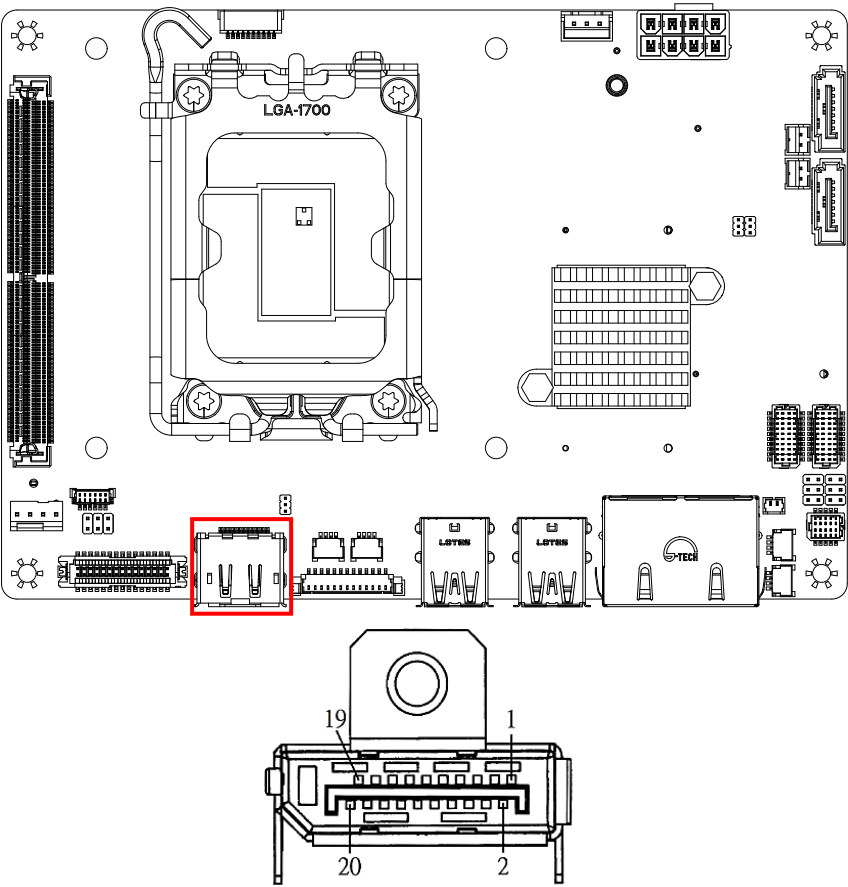
Note: The driving current of +5VSB supports up to 0.9A/Port.

2.4.18 Front Panel (CN22)



Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	EXT_PWRBTN#	IN	-
3	SATA_LED-	OUT	-
4	SATA_LED+	OUT	-
5	BUZZER-	OUT	-
6	BUZZER+	OUT	-
7	GND	GND	GND
8	PWR_LED+	OUT	-
9	GND	GND	GND
10	HWRST#	IN	-

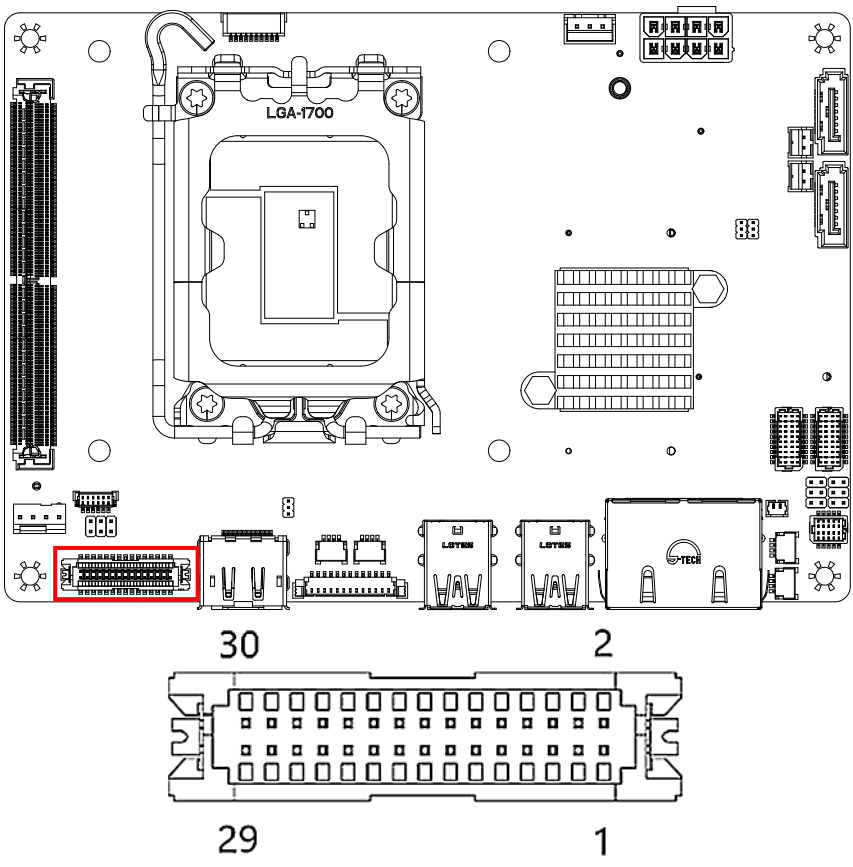
2.4.19 Display Port (CN23)



Pin	Pin Name	Signal Type	Signal Level
1	DP_TX0_DP	DIFF	-
2	GND	GND	GND
3	DP_TX0_DN	DIFF	-
4	DP_TX1_DP	DIFF	-
5	GND	GND	GND
6	DP_TX1_DN	DIFF	-
7	DP_TX2_DP	DIFF	-
8	GND	GND	GND
9	DP_TX2_DN	DIFF	-
10	DP_TX3_DP	DIFF	-

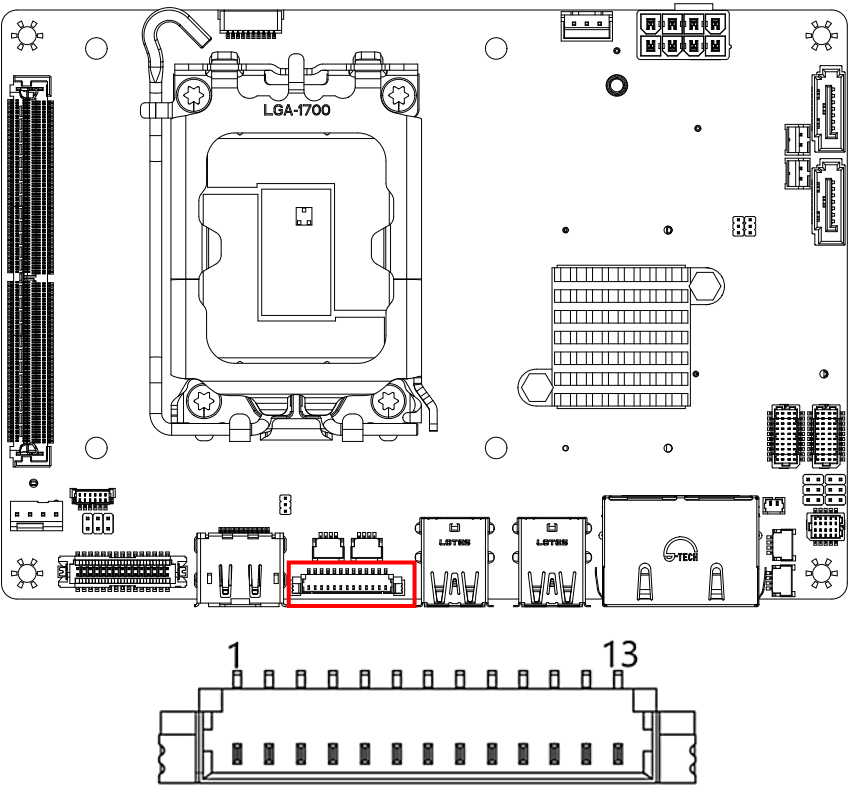
Pin	Pin Name	Signal Type	Signal Level
11	GND	GND	GND
12	DP_TX3_DN	DIFF	-
13	DP_OB_AUX_EN	IN	-
14	GND	GND	GND
15	DP_AUX_DP	IN/OUT	-
16	GND	GND	GND
17	DP_AUX_DN	IN/OUT	-
18	DP_HPD	IN/OUT	-
19	GND	GND	GND
20	+3.3V	PWR	+3.3V

2.4.20 LVDS Connector (CN24)



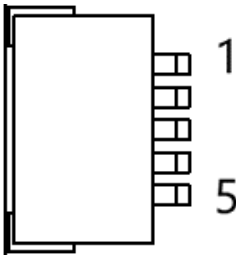
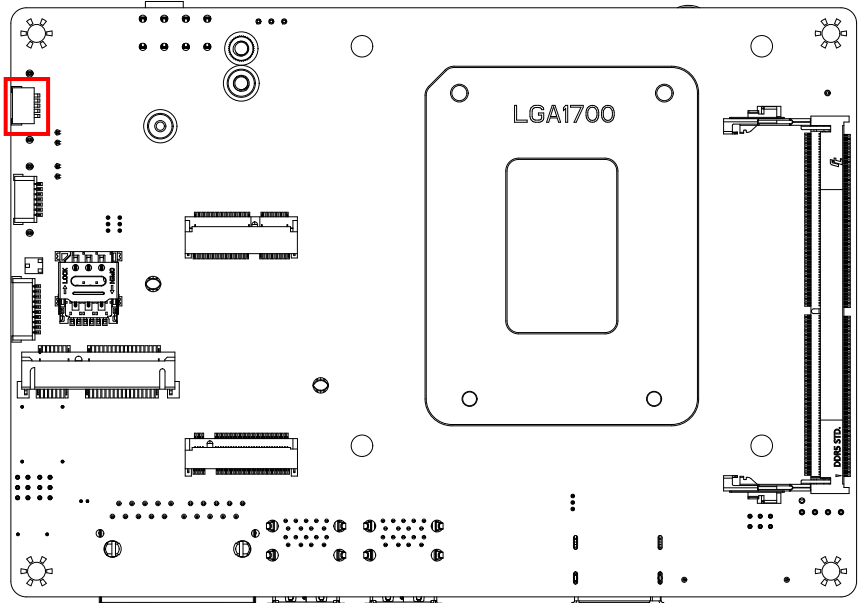
Pin	Pin Name	Signal Type	Signal Level
1	BKL_ENABLE	OUT	-
2	BKL_CONTROL	OUT	-
3	LCD_PWR	PWR	+3.3V/+5V
4	GND	GND	GND
5	LVDS_A_CLK-	DIFF	-
6	LVDS_A_CLK+	DIFF	-
7	LCD_PWR	PWR	+3.3V/+5V
8	GND	GND	GND
9	LVDS_DA0-	DIFF	-
10	LVDS_DA0+	DIFF	-
11	LVDS_DA1-	DIFF	-
12	LVDS_DA1+	DIFF	-
13	LVDS_DA2-	DIFF	-
14	LVDS_DA2+	DIFF	-
15	LVDS_DA3-	DIFF	-
16	LVDS_DA3+	DIFF	-
17	DDC_DATA	OUT	+3.3V
18	DDC_CLK	IN	+3.3V
19	LVDS_DB0-	DIFF	-
20	LVDS_DB0+	DIFF	-
21	LVDS_DB1-	DIFF	-
22	LVDS_DB1+	DIFF	-
23	LVDS_DB2-	DIFF	-
24	LVDS_DB2+	DIFF	-
25	LVDS_DB3-	DIFF	-
26	LVDS_DB3+	DIFF	-
27	LCD_PWR	PWR	+3.3V/+5V
28	GND	GND	GND
29	LVDS_B_CLK-	DIFF	-
30	LVDS_B_CLK+	DIFF	-

2.4.21 VGA Connector (CN25)



Pin	Pin Name	Signal Type	Signal Level
1	VSYNC	OUT	-
2	HSYNC	OUT	-
3	GND	GND	GND
4	DDCLK	OUT	
5	DDCDAT	OUT	
6	GND	GND	GND
7	BLUE	OUT	
8	GND	GND	GND
9	GREEN	OUT	
10	GND	GND	GND
11	RED	OUT	
12	GND	GND	GND
13	+V5S	PWR	+5V

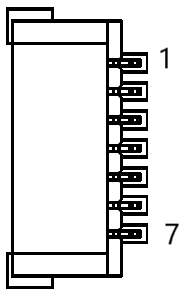
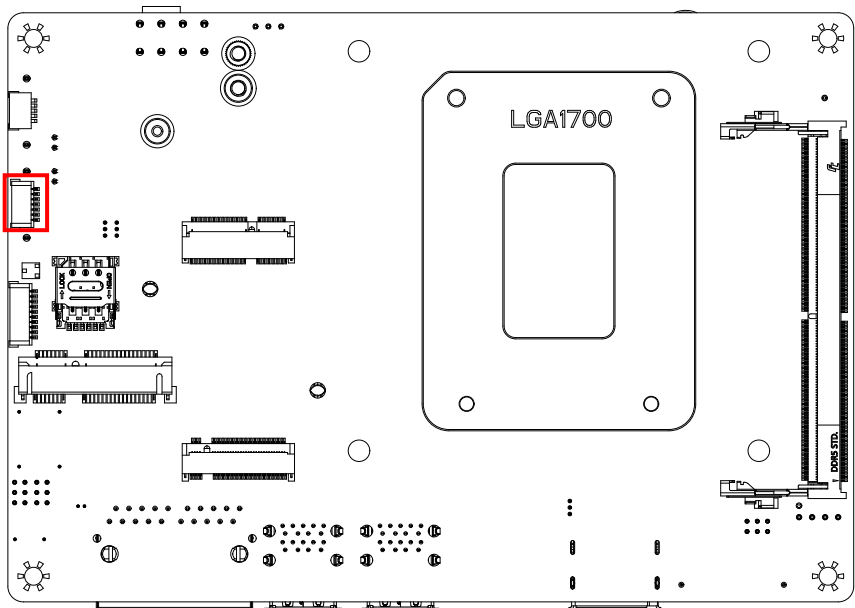
2.4.22 SMBus/I2C Connector (CN26)



Pin	Pin Name	Signal Type	Signal Level
1	+V3P3A	PWR	+3.3V
2	SMB_I2C_SCL	OUT	+3.3V
3	SMB_I2C_SDA	IN/OUT	+3.3V
4	SMB_I2C_ALERT#	IN	+3.3V
5	GND	GND	GND

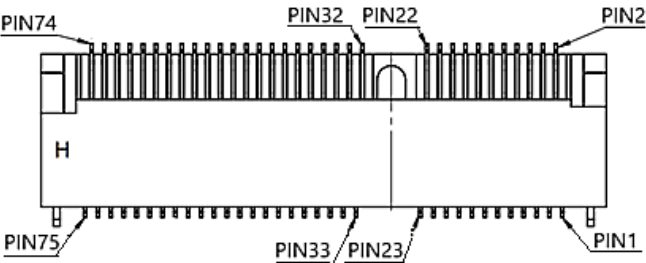
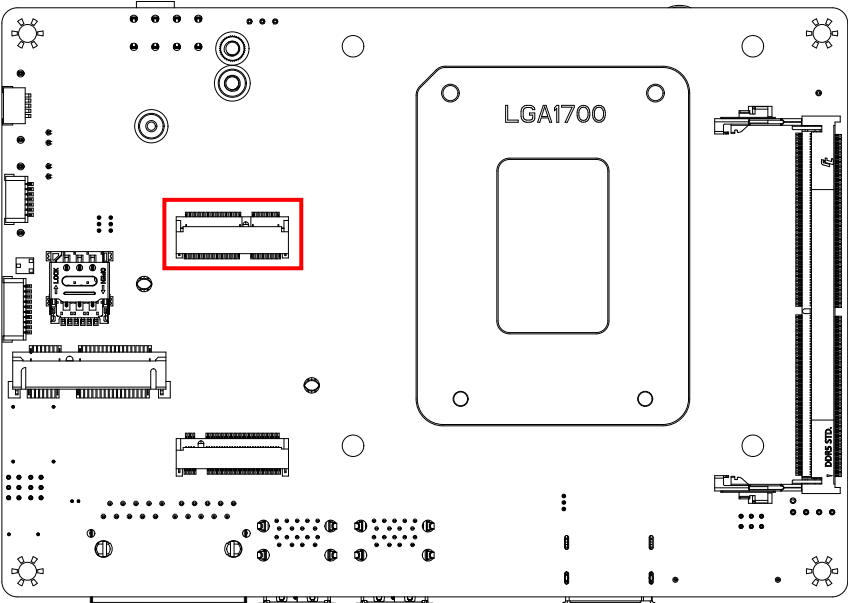
Note: Default function is SMBus.

2.4.23 SPI Flash Programming Connector (CN27)



Pin	Pin Name	Signal Type	Signal Level
1	SPI_MISO	IN	-
2	GND	GND	GND
3	SPI_CLK	IN	-
4	+V3P3A_SPI	PWR	+3.3V
5	SPI_MOSI	OUT	-
6	SPI_CS	IN	-
7	NC	-	-

2.4.24 M.2 E-Key (CN28)

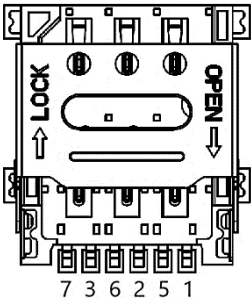
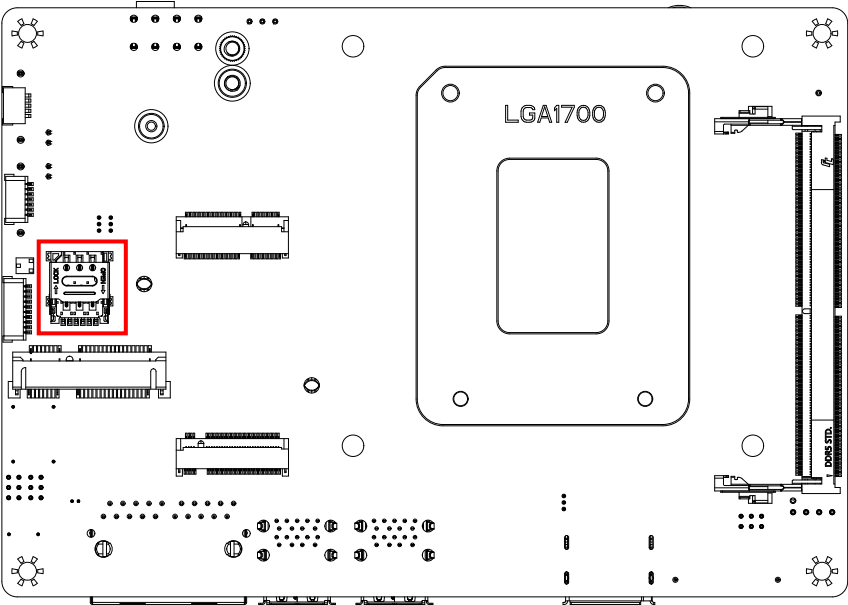


Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	+V3P3A	PWR	+3.3V
3	USB2_DP	DIFF	-
4	+V3P3A	PWR	+3.3V
5	USB2_DN	DIFF	-
6	NC	-	-
7	GND	GND	GND
8	NC	-	-

Pin	Pin Name	Signal Type	Signal Level
9	NC	-	-
10	NC	-	-
11	NC	-	-
12	NC	-	-
13	NC	-	-
14	NC	-	-
15	NC	-	-
16	NC	-	-
17	NC	-	-
18	GND	GND	GND
19	NC	-	-
20	NC	-	-
21	NC	-	-
22	NC	-	-
23	NC	-	-
32	NC	-	-
33	GND	GND	GND
34	NC	-	-
35	PCIE1_TXP	DIFF	-
36	NC	-	-
37	PCIE1_TXN	DIFF	-
38	NC	-	-
39	GND	GND	GND
40	NC	-	-
41	PCIE1_RXP	DIFF	-
42	NC	-	-
43	PCIE1_RXN	DIFF	-
44	NC	-	-
45	GND	GND	GND
46	NC	-	-
47	PCIE_CLK_DP	DIFF	-
48	NC	-	-
49	PCIE_CLK_DN	DIFF	-
50	SUS_CLK	OUT	-
51	GND	GND	GND
52	BUF_PLT_RST#	OUT	-
53	PCIE_CLKREQ	IN	-
54	NC	-	-
55	PCIE_WAKE#	IN/OUT	-

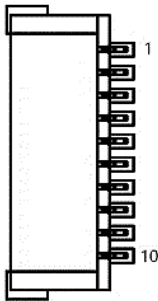
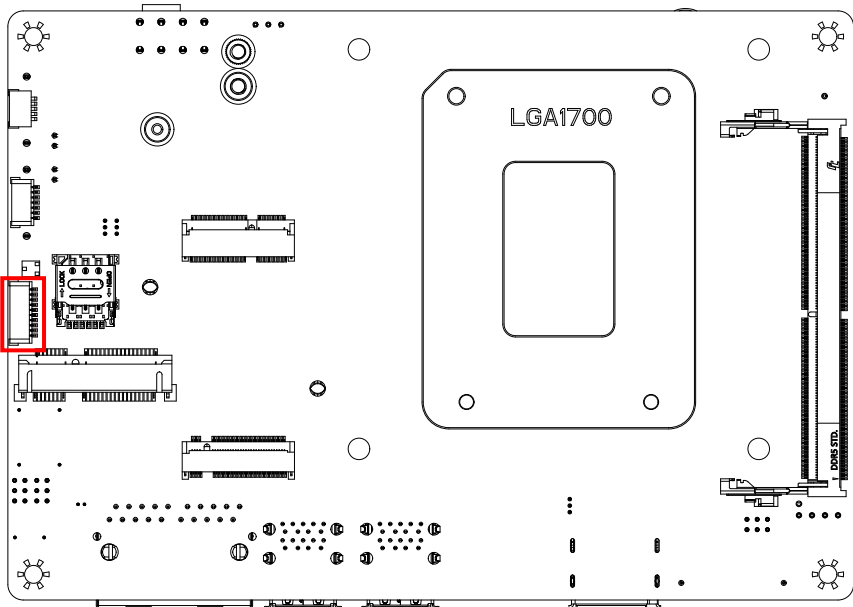
Pin	Pin Name	Signal Type	Signal Level
56	NC	-	-
57	GND	GND	GND
58	NC	-	-
59	NC	DIFF	-
60	NC	-	-
61	NC	DIFF	-
62	NC	-	-
63	GND	GND	GND
64	NC	-	-
65	NC	-	-
66	NC	-	-
67	NC	-	-
68	NC	-	-
69	GND	GND	GND
70	NC	-	-
71	NC	-	-
72	+V3P3A	PWR	+3.3V
73	NC	-	-
74	+V3P3A	PWR	+3.3V
75	GND	GND	GND

2.4.25 Nano SIM Slot (CN29)



Pin	Pin Name	Signal Type	Signal Level
1	UIM_PWR	PWR	-
2	UIM_RST	OUT	-
3	UIM_CLK	OUT	-
5	GND	GND	GND
6	UIM_VPP	PWR	-
7	UIM_DATA	IN/OUT	-

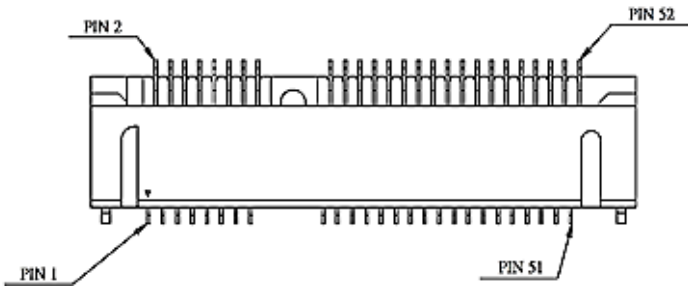
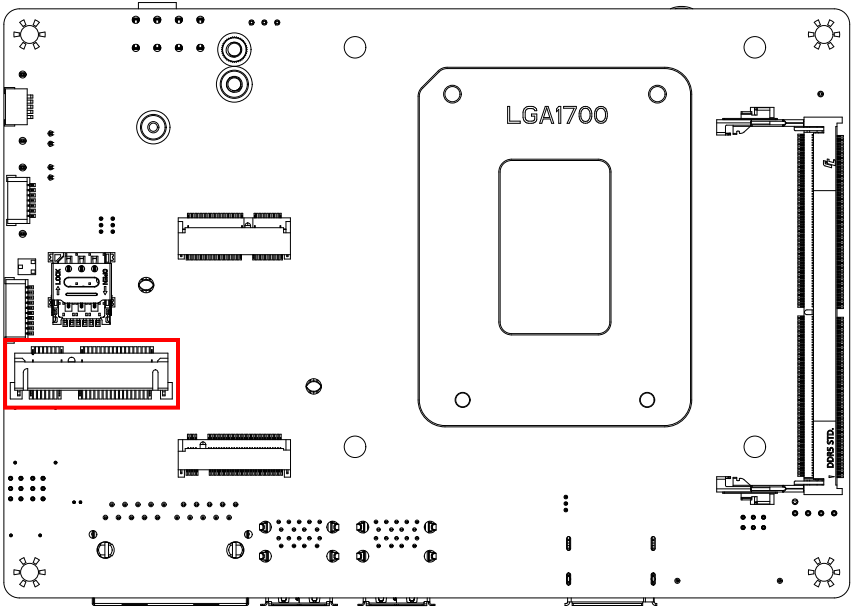
2.4.26 Port 80 Debug Port (CN30)



Pin	Pin Name	Signal Type	Signal Level
1	ESPI_IO0_EC_R	IN/OUT	+1.8V
2	ESPI_IO1_EC_R	IN/OUT	+1.8V
3	ESPI_IO2_EC_R	IN/OUT	+1.8V
4	ESPI_IO3_EC_R	IN/OUT	+1.8V
5	+V3P3S	PWR	+3.3V
6	ESPI_CS_EC_R_N	OUT	-3.3V
7	ESPI_RST_EC_R_N	OUT	+1.8V
8	GND	GND	GND

Pin	Pin Name	Signal Type	Signal Level
9	ESPI_CLK_EC_R	OUT	+1.8V
10	+V3P3A	PWR	+3.3V

2.4.27 Mini Card/mSATA Slot (CN31)

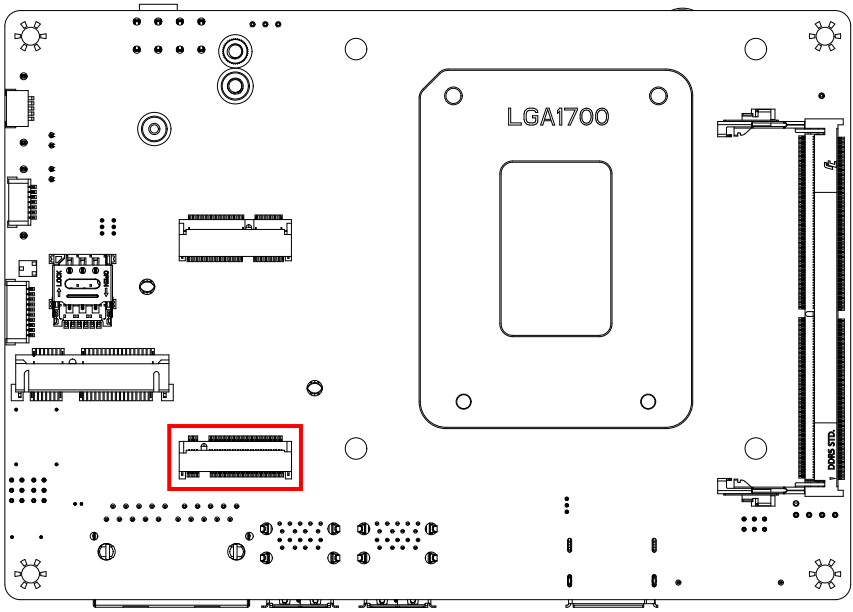


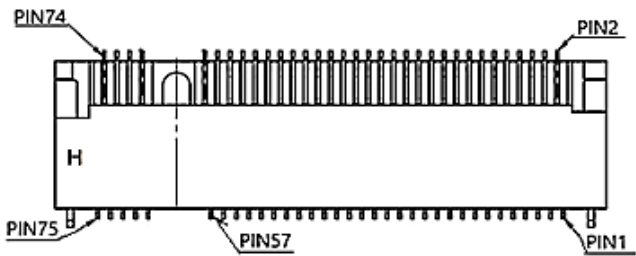
Pin	Pin Name	Signal Type	Signal Level
1	PCIE_WAKE#	IN	-
2	+3.3V	PWR	+3.3V
3	NC	NC	NC

Pin	Pin Name	Signal Type	Signal Level
4	GND	GND	GND
5	NC	NC	NC
6	+1.5V	PWR	+1.5V
7	PCIE_CLK_REQ#	IN	-
8	UIM_PWR	PWR	-
9	GND	GND	GND
10	UIM_DAT	IN/OUT	NC
11	PCIE_CLKN	DIFF	-
12	UIM_CLK	OUT	NC
13	PCIE_CLKP	DIFF	-
14	UIM_RST	OUT	NC
15	GND	GND	GND
16	UIM_VPP	PWR	NC
17	NC	NC	NC
18	GND	GND	GND
19	NC	NC	NC
20	W_DISABLE#	OUT	+3.3V
21	GND	GND	GND
22	BUF_PLT_RST#	OUT	+3.3V
23	PCIE_RX-/SATA_RX+	DIFF	GND
24	+3.3V	PWR	+3.3V
25	PCIE_RX+/SATA_RX-	DIFF	-
26	GND	GND	GND
27	GND	GND	GND
28	+1.5V	PWR	+1.5V
29	GND	GND	GND
30	SMB_CLK	OUT	+3.3V
31	PCIE_TX-/SATA_TX-	DIFF	-
32	SMB_DATA	IN/OUT	+3.3V
33	PCIE_TX+/SATA_TX+	DIFF	-
34	GND	GND	GND
35	GND	GND	GND
36	USB_D-	DIFF	-
37	GND	GND	GND
38	USB_D+	DIFF	-
39	+3.3V	PWR	+3.3V
40	GND	GND	GND
41	+3.3V	PWR	+3.3V
42	NC	NC	NC

Pin	Pin Name	Signal Type	Signal Level
43	NC	NC	NC
44	NC	NC	NC
45	NC	NC	NC
46	NC	NC	NC
47	NC	NC	NC
48	+1.5V	PWR	+1.5V
49	NC	NC	NC
50	GND	GND	GND
51	NC	NC	NC
52	+3.3V	PWR	+3.3V

2.4.28 M.2 M-Key (CN32)

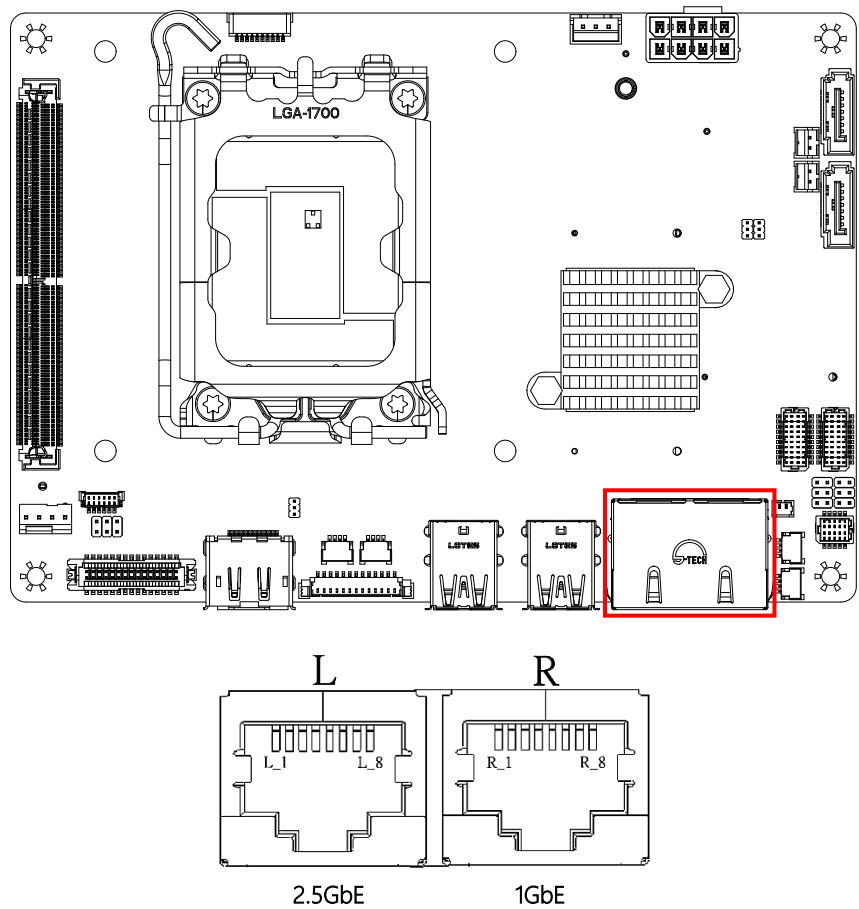




Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	GND
2	+V3P3S	PWR	+3.3V
3	GND	GND	GND
4	+V3P3S	PWR	+3.3V
5	PCIE8_RXN	DIFF	-
6	NC	-	-
7	PCIE8_RXP	DIFF	-
8	NC	-	-
9	GND	GND	GND
10	NC	-	-
11	PCIE8_TXN	DIFF	-
12	+V3P3S	PWR	+3.3V
13	PCIE8_TXP	DIFF	-
14	+V3P3S	PWR	+3.3V
15	GND	GND	GND
16	+V3P3S	PWR	+3.3V
17	PCIE7_RXN	DIFF	-
18	+V3P3S	PWR	+3.3V
19	PCIE7_RXP	DIFF	-
20	NC	-	-
21	GND	GND	GND
22	NC	-	-
23	PCIE7_TXN	DIFF	-
24	NC	-	-
25	PCIE7_TXP	DIFF	-
26	NC	-	-
27	GND	GND	GND
28	NC	-	-
29	PCIE6_RXN	DIFF	-
30	NC	-	-

Pin	Pin Name	Signal Type	Signal Level
31	PCIE6_RXP	DIFF	-
32	NC	-	-
33	GND	GND	GND
34	NC	-	-
35	PCIE6_TXN	DIFF	-
36	NC	-	-
37	PCIE6_TXP	DIFF	-
38	NC	-	-
39	GND	GND	GND
40	NC	-	-
41	PCIE5_RXN	DIFF	-
42	NC	-	-
43	PCIE5_RXP	DIFF	-
44	NC	-	-
45	GND	GND	GND
46	NC	-	-
47	PCIE5_TXN	DIFF	-
48	NC	-	-
49	PCIE5_TXP	DIFF	-
50	BUF_PLT_RST#	OUT	-
51	GND	GND	GND
52	M2M_CLKREQ#	IN	-
53	PCIE5_CLK_DN	DIFF	-
54	PCIE_WAKE#	IN	-
55	PCIE5_CLK_DP	DIFF	-
56	NC	-	-
57	GND	GND	GND
58	NC	-	-
67	NC	-	-
68	SUS_CLK	OUT	-
69	NC	-	-
70	+V3P3S	PWR	+3.3V
71	GND	GND	GND
72	+V3P3S	PWR	+3.3V
73	GND	GND	GND
74	+V3P3S	PWR	+3.3V
75	GND	GND	GND

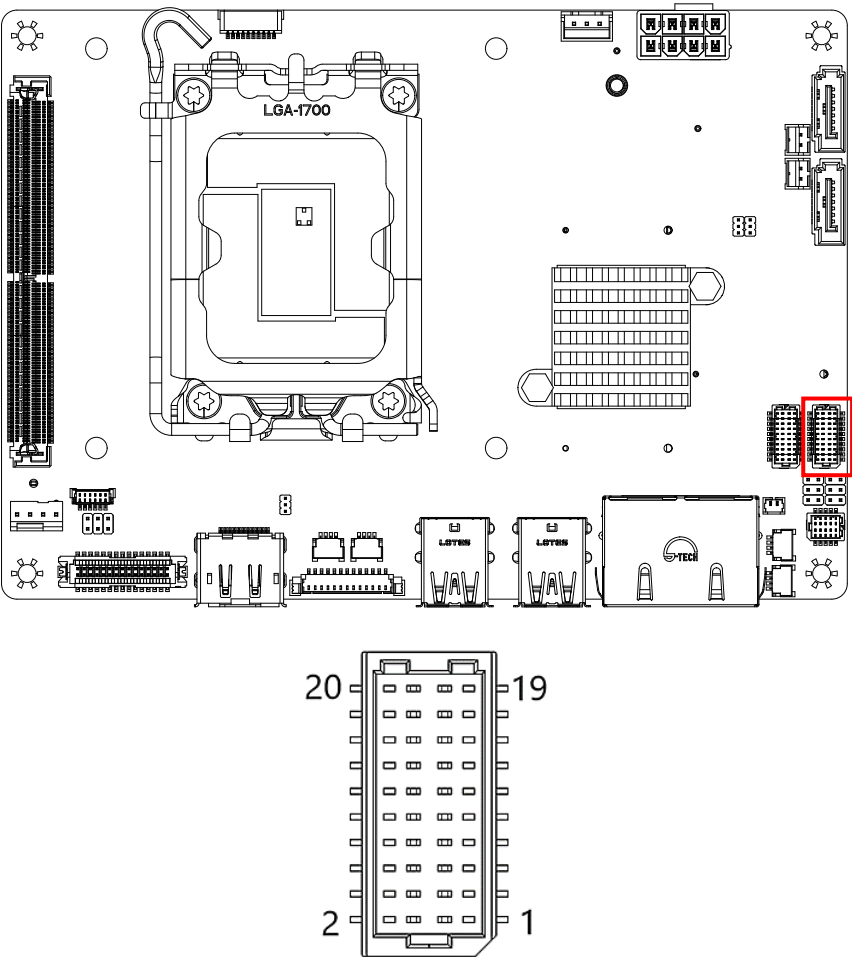
2.4.29 Dual RJ-45 Port (CN33)



Pin	Pin Name	Signal Type	Signal Level
L_1	LAN1_MDIO_P	DIFF	-
L_2	LAN1_MDIO_N	DIFF	-
L_3	LAN1_MDIO_P	DIFF	-
L_4	LAN1_MDIO_N	DIFF	-
L_5	LAN1_MDIO_P	DIFF	-
L_6	LAN1_MDIO_N	DIFF	-
L_7	LAN1_MDIO_P	DIFF	-
L_8	LAN1_MDIO_N	DIFF	-
R_1	LAN2_MDIO_P	DIFF	-

Pin	Pin Name	Signal Type	Signal Level
R_2	LAN2_MDI0_N	DIFF	-
R_3	LAN2_MDI1_P	DIFF	-
R_4	LAN2_MDI1_N	DIFF	-
R_5	LAN2_MDI2_P	DIFF	-
R_6	LAN2_MDI2_N	DIFF	-
R_7	LAN2_MDI3_P	DIFF	-
R_8	LAN2_MDI3_N	DIFF	-

2.4.30 Dual COM Port Connector (RS-232/422/285) (CN34)



COM Port 1/Port 2 RS-232 (Default)			
Pin	Pin Name	Signal Type	Signal Level
1	DCD1	IN	-
2	DCD2	IN	-
3	RX1	IN	-
4	RX2	IN	-
5	TX1	OUT	±9V
6	TX2	OUT	±9V
7	DTR1	OUT	±9V
8	DTR2	OUT	±9V
9	GND	GND	GND
10	GND	GND	GND
11	DSR1	IN	-
12	DSR2	IN	-
13	RTS1	OUT	±9V
14	RTS2	OUT	±9V
15	CTS1	IN	-
16	CTS2	IN	-
17	RI1/ +5V/ +12V	IN/ PWR	+5V/+12V
18	RI2/ +5V/ +12V	IN/ PWR	+5V/+12V
19	NC	NC	NC
20	NC	NC	NC

COM Port 1 RS-422			
Pin	Pin Name	Signal Type	Signal Level
1	DCD1	IN	-
2	DCD2	IN	-
3	RX1	IN	-
4	RX2	IN	-
5	TX1	OUT	±9V

COM Port 1 RS-485			
Pin	Pin Name	Signal Type	Signal Level
1	RS485_D-	IN/OUT	±9V
3	RS485_D+	IN/OUT	±9V
9	GND	GND	GND

Note: COM 1 RS-232/422/485 can be set by BIOS setting. Default is RS-232.

Note: Pin 17 function can be set by JP3.

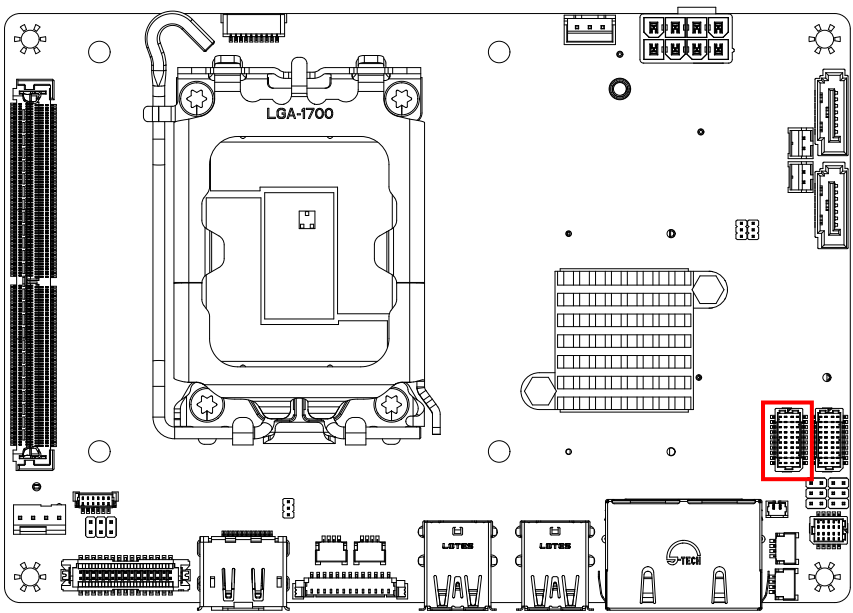
COM Port 2 RS-422			
Pin	Pin Name	Signal Type	Signal Level
2	RS422_TX-	OUT	±9V
4	RS422_TX+	OUT	±9V
6	RS422_RX+	IN	
8	RS422_RX-	IN	
10	GND	GND	GND

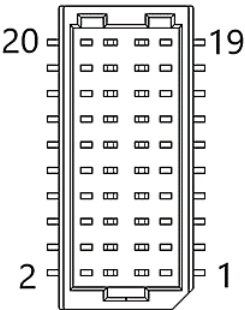
COM Port 2 RS-485			
Pin	Pin Name	Signal Type	Signal Level
2	RS485_D-	IN/OUT	±9V
4	RS485_D+	IN/OUT	±9V
10	GND	GND	GND

Note: COM 2 RS-232/422/485 can be set by BIOS setting. Default is RS-232.

Note: Pin 18 function can be set by JP4.

2.4.31 Dual COM Port Connector (RS-232 only) (CN35)





COM Port 3/Port 4 RS-232			
Pin	Pin Name	Signal Type	Signal Level
1	DCD3	IN	-
2	DCD4	IN	-
3	RX3	IN	-
4	RX4	IN	-
5	TX3	OUT	±9V
6	TX4	OUT	±9V
7	DTR3	OUT	±9V
8	DTR4	OUT	±9V
9	GND	GND	GND
10	GND	GND	GND
11	DSR3	IN	-
12	DSR4	IN	-
13	RTS3	OUT	±9V
14	RTS4	OUT	±9V
15	CTS3	IN	-
16	CTS4	IN	-
17	RI3	IN	-
18	RI4	IN	-
19	NC	NC	NC
20	NC	NC	NC

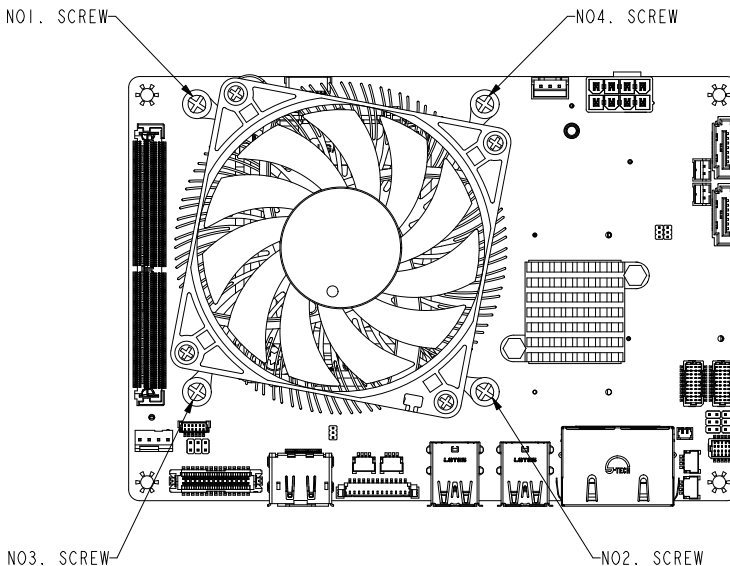
2.5 CPU Cooler Installation

Installation Instructions

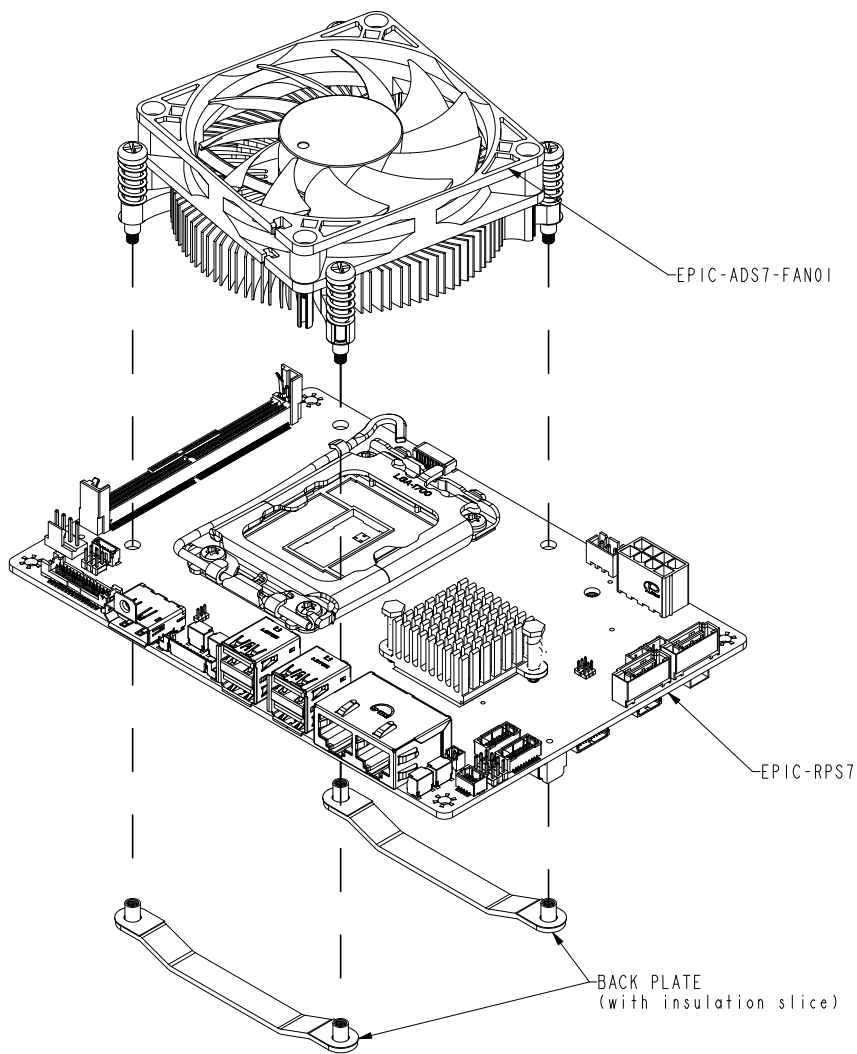
1. Do not apply any thermal grease to the cooler - the required amount has already been applied.
2. The back plate should be pre-attached to the underside of the motherboard.

Remember to peel off the insulation slice liner prior to installation.

3. Place the cooler directly on top of the CPU so that the heatsink screws are aligned with the mounting holes on the back plate.
4. Make sure screwdriver torque setting is no more than 5.0 kgf-cm (4.3 lbf-in) and keep heatsink screws direction vertical.
5. Screw in two diagonal screws (i.e. the #1 and #2 screws) until they are just snug (do not fully tighten), then do the same with the remaining two diagonal screws.
6. Finish by fully tightening all four screws.
7. Connect the fan cable to the CPU fan connector on the motherboard.



Part No: EPIC-ADS7-FAN01



Chapter 3

AMI BIOS Setup

3.1 System Test and Initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors.

System configuration verification

These routines check the current system configuration stored in the CMOS memory and BIOS NVRAM. If system configuration is not found or system configuration data error is detected, system will load optimized default and re-boot with this default system configuration automatically.

There are four situations in which you will need to setup system configuration:

1. You are starting your system for the first time
2. You have changed the hardware attached to your system
3. The system configuration is reset by Clear-CMOS jumper
4. The CMOS memory has lost power and the configuration information has been erased.

The EPIC-RPS7 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

3.2 AMI BIOS Setup

AMI BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM and BIOS NVRAM so that it retains the Setup information when the power is turned off.

Entering Setup

Power on the computer and press or <ESC> immediately. This will allow you to enter Setup.

Main

Set the date, use tab to switch between date elements.

Advanced

Enable/disable boot option for legacy network devices.

Chipset

Host bridge parameters.

Boot

Enables/disables quiet boot option.

Security

Set setup administrator password.

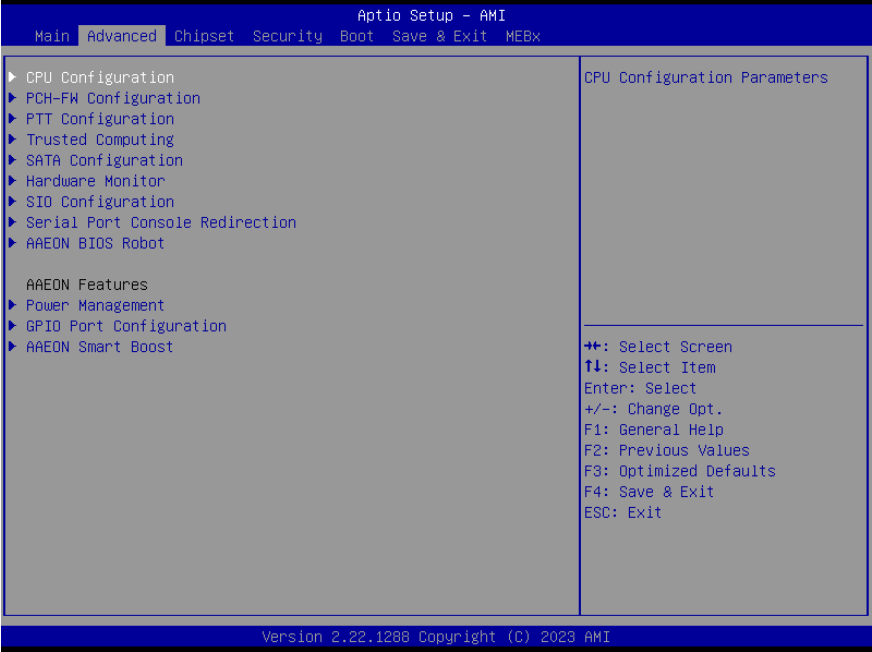
Save & Exit

Exit system setup after saving the changes.

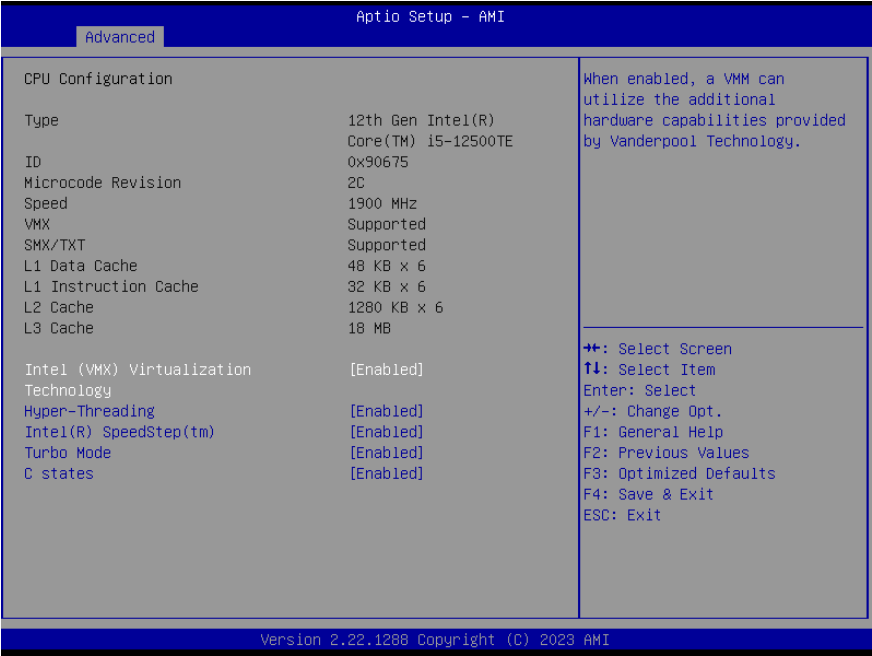
3.3 Setup Submenu: Main



3.4 Setup Submenu: Advanced



3.4.1 CPU Configuration

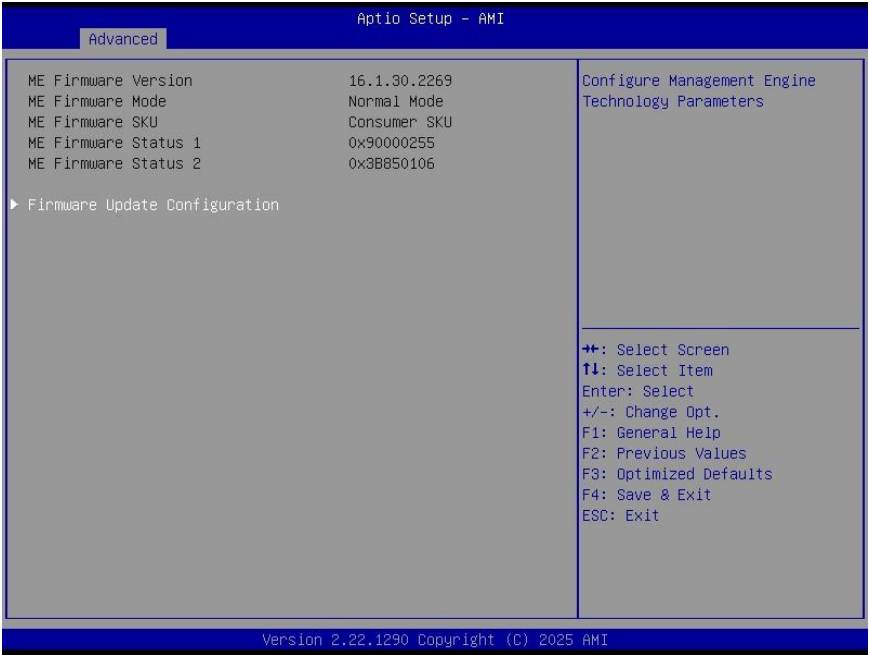


Options Summary		
Intel (VMX) Virtualization Technology	Disabled	
	Enabled	Optimal Default, Failsafe Default
When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.		
Hyper-Threading	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable Hyper-Threading Technology.		
Intel® SpeedStep™	Disabled	
	Enabled	Optimal Default, Failsafe Default
Allows more than two frequency ranges to be supported.		
Turbo Mode	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable processor Turbo Mode (requires EMTTM enable too). AUTO means enabled		
C states	Disabled	
	Enabled	Optimal Default, Failsafe Default

Options Summary

Enable/Disable CPU Power Management. Allows CPU to go to C states when it's not 100 utilized.

3.4.2 PCH-FW Configuration

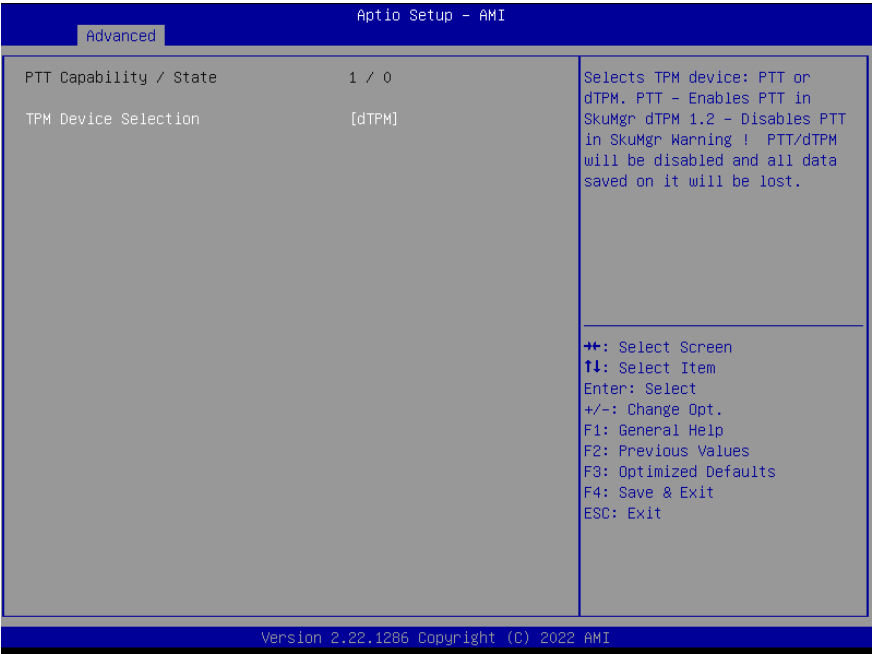


3.4.3 Firmware Update Configuration



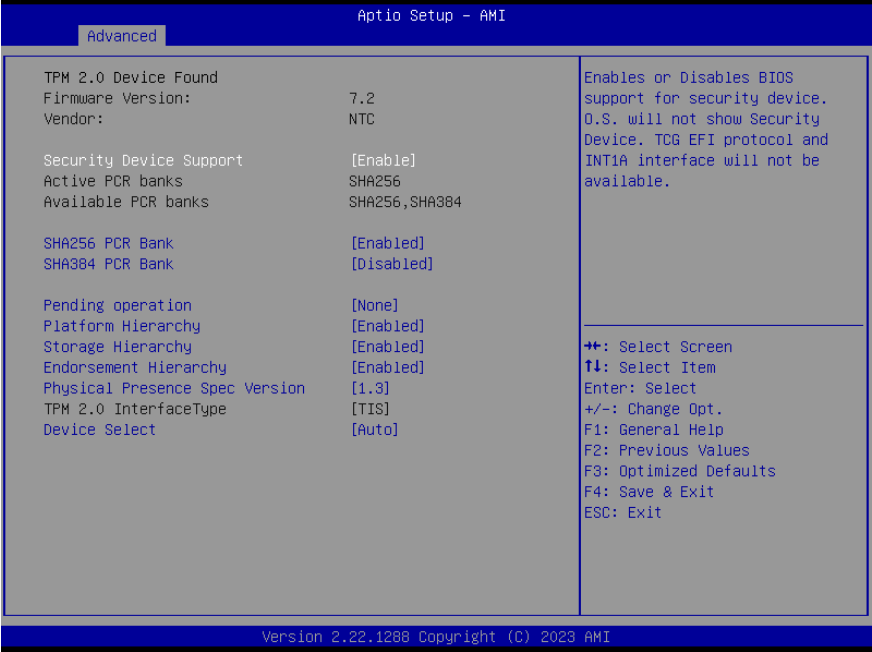
Options Summary		
Me FW Image Re-Flash	Enabled	
	Disabled	Optimal Default, Failsafe Default
Enable/Disable Me FW Image Re-Flash function.		
FW Update	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable/Disable ME FW Update function.		

3.4.4 PTT Configuration



Options Summary		
TPM Device Selection	dTPM	Optimal Default, Failsafe Default
	PTT	
Selects TPM device: PTT or discrete TPM. PTT - enables PTT in SkuMgr. dTPM - disables PTT in SkuMgr. Warning! PTT/dTPM will be disabled and all data saved on it will be lost.		

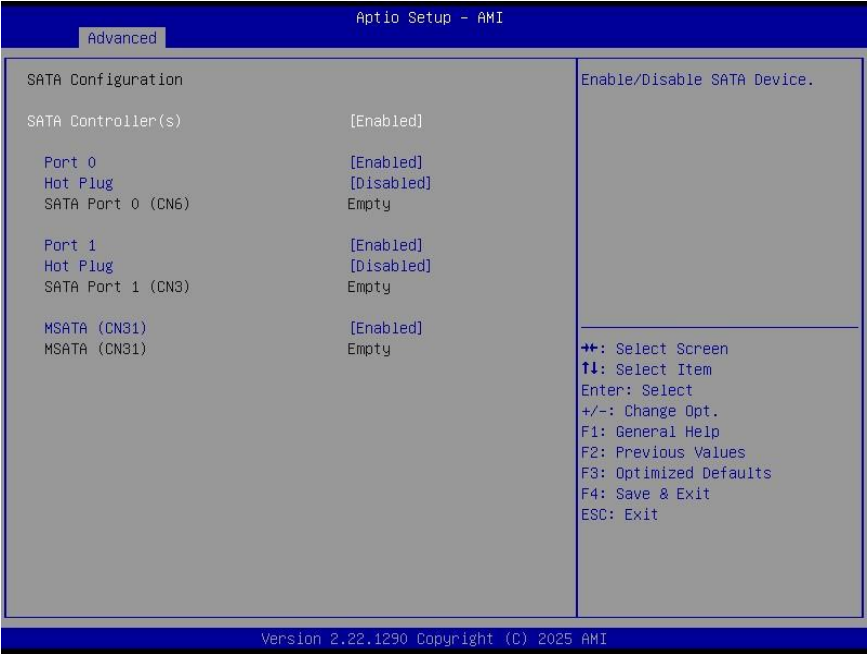
3.4.5 Trusted Computing



Options Summary		
Security Device Support	Enable	Optimal Default, Failsafe Default
	Disable	
Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.		
SHA256 PCR Bank	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable SHA256 PCR Bank.		
SHA384 PCR Bank	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable SHA384 PCR Bank.		
Pending operation	None	Optimal Default, Failsafe Default
	TPM Clear	
Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.		
Platform Hierarchy	Enabled	Optimal Default, Failsafe Default
	Disabled	

Options Summary		
Enable or Disable Platform Hierarchy.		
Storage Hierarchy	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable Storage Hierarchy.		
Endorsement Hierarchy	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable Endorsement Hierarchy.		
Physical Presence Spec Version	1.3	Optimal Default, Failsafe Default
	1.2	
Select to Tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3.		
Device Select	Auto	Optimal Default, Failsafe Default
	TPM 1.2	
	TPM 2.0	
TPM 1.2 will restrict support to TPM 1.2 devices. TPM 2.0 will restrict support to TPM 2.0 devices. Auto will support both with the default set to TPM 2.0 devices if not found. TPM 1.2 devices will be enumerated.		

3.4.6 SATA Configuration



Options Summary		
SATA Controller(s)	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable/Disable SATA Device.		
Port 0	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable SATA Port.		
Hot Plug	Disabled	Optimal Default, Failsafe Default
	Enabled	
Designates this port as Hot Pluggable.		
Port 1	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable SATA Port.		
Hot Plug	Disabled	Optimal Default, Failsafe Default
	Enabled	
Designates this port as Hot Pluggable.		

Options Summary

MSATA	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or Disable SATA Port.		

3.4.7 Hardware Monitor

Advanced

CPU Temperature

: +47 °C

System Temperature

: +42 °C

System Temperature 2

: +39 °C

CPU FAN

: 2890 RPM

VDDRE

: +0.856 V

+12V

: +11.968 V

+5V

: +5.045 V

VMEM

: +5.003 V

+3.3V

: +3.392 V

3VSB

: +3.392 V

5VSB

: +5.016 V

VBAT

: +3.200 V

Smart Fan

[Enabled]

Smart Fan Mode Configuration

Enable or Disable Smart Fan

++: Select Screen

Tl: Select Item

Enter: Select

+/-: Change Opt.

F1: General Help

F2: Previous Values

F3: Optimized Defaults

F4: Save & Exit

ESC: Exit

Version 2.22.1286 Copyright (C) 2022 AMI

Options Summary

Smart Fan	Disable	
	Enable	Optimal Default, Failsafe Default
Enables or Disables Smart Fan.		

3.4.7.1 Smart Fan Mode Configuration

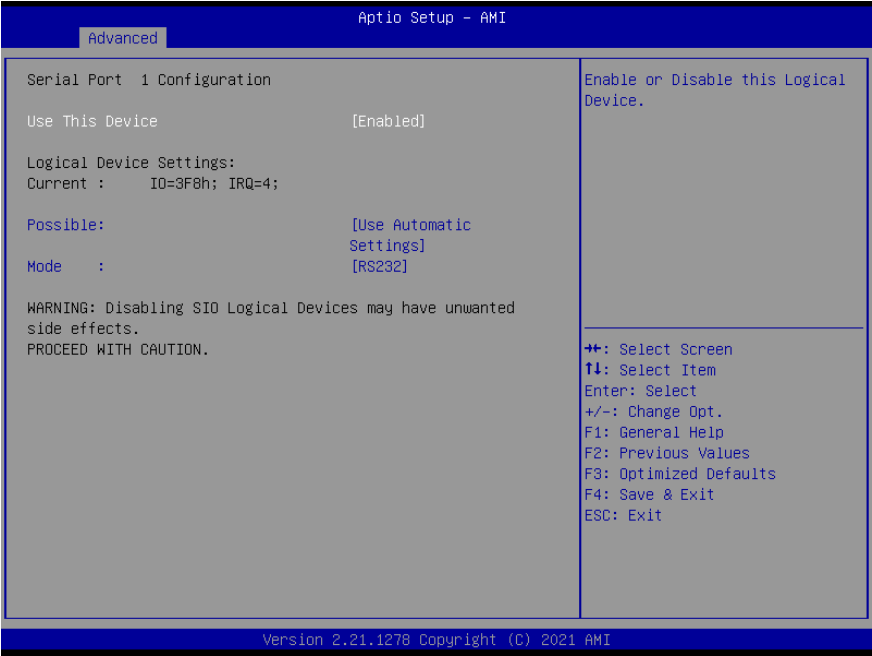


Options Summary		
Fan 1 Smart Fan Control	Manual Duty Mode	
	Auto Duty-Cycle Mode	Optimal Default, Failsafe Default
Smart Fan Mode Select		
Temperature Source	CPU Temperature	Optimal Default, Failsafe Default
Select the monitored temperature source for this fan.		
Temperature 1	60	
Duty Cycle 1	85	
Auto fan speed control. Fan speed will follow different temperature by different duty cycle 1-100		

3.4.8 SIO Configuration

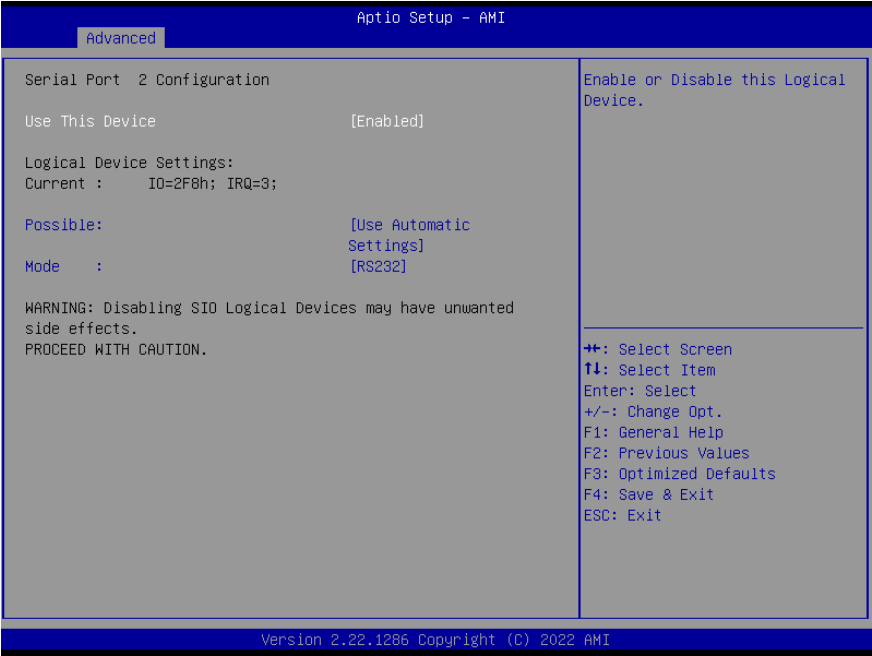


3.4.8.1 Serial Port 1 Configuration



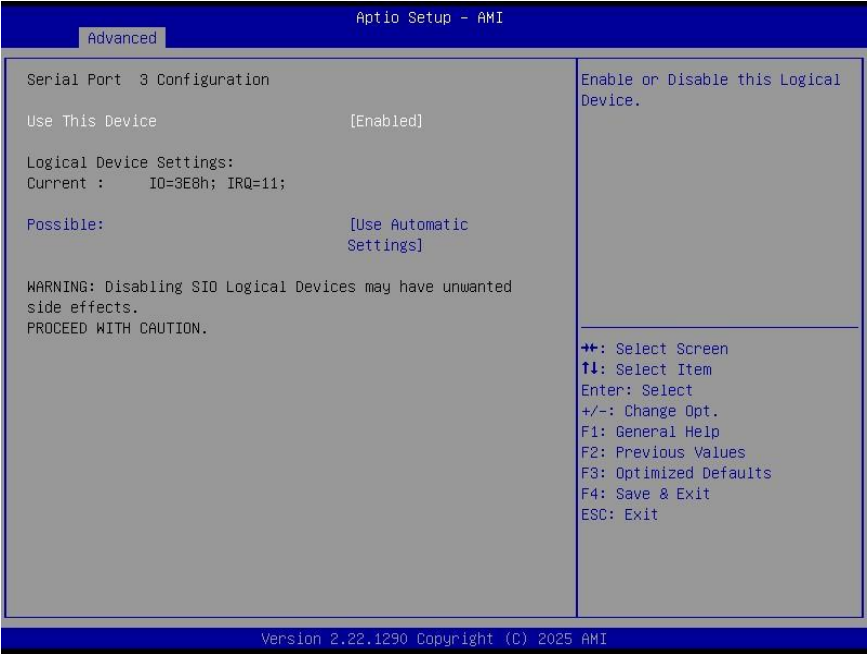
Options Summary		
Use This Device	Disable	
	Enable	Optimal Default, Failsafe Default
Enable or Disable this Logical Device.		
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=3F8h; IRQ=4	
	IO=2F8h; IRQ=3	
Allows user to change Device's Resource settings. New settings will be reflected on This Setup Page after System restarts.		
Mode:	RS232	Optimal Default, Failsafe Default
	RS422	
	RS485	
UART RS232, 422, 485 selection.		

3.4.8.2 Serial Port 2 Configuration



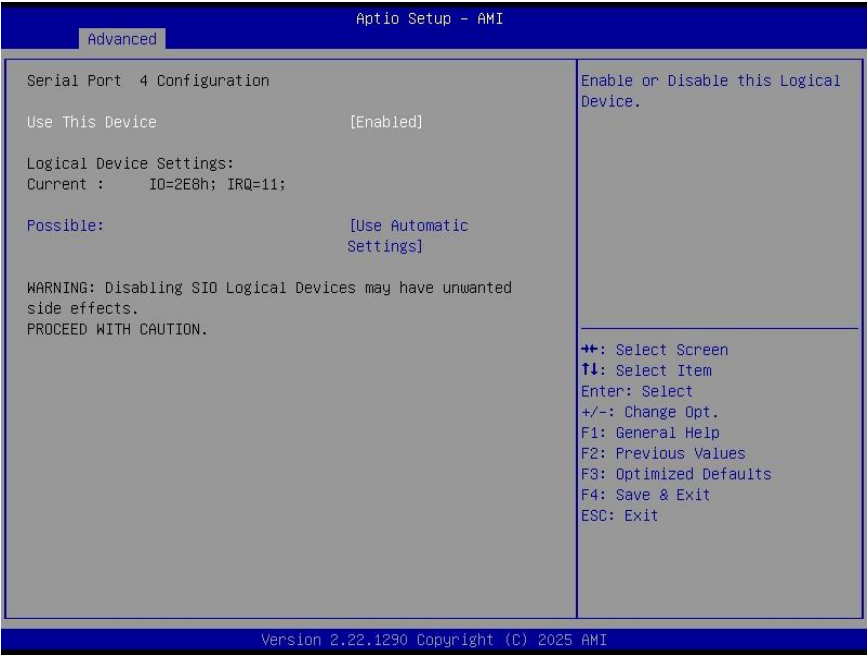
Options Summary		
Use This Device	Disable	
	Enable	Optimal Default, Failsafe Default
Enable or Disable this Logical Device.		
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=2F8h; IRQ=3	
	IO=3F8h; IRQ=4	
Allows user to change Device's Resource settings. New settings will be reflected on This Setup Page after System restarts.		
Mode:	RS232	Optimal Default, Failsafe Default
	RS422	
	RS485	
UART RS232, 422, 485 selection.		

3.4.8.3 Serial Port 3 Configuration



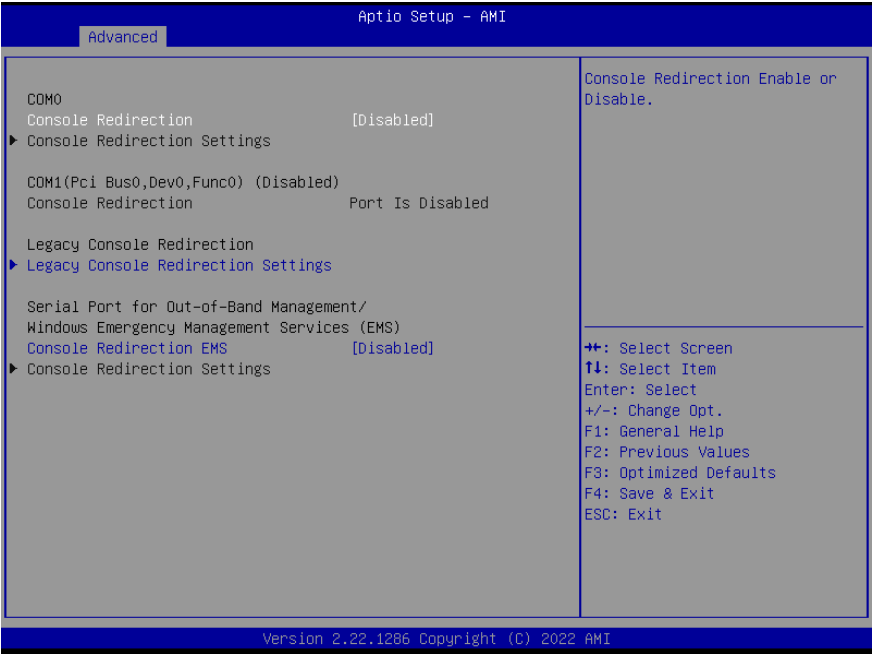
Options Summary		
Use This Device	Disable	
	Enable	Optimal Default, Failsafe Default
Enable or Disable this Logical Device.		
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=2F8h; IRQ=11	
	IO=3F8h; IRQ=11	
Allows user to change Device's Resource settings. New settings will be reflected on This Setup Page after System restarts.		
Mode:	RS232	Optimal Default, Failsafe Default
	RS422	
	RS485	
UART RS232, 422, 485 selection.		

3.4.8.4 Serial Port 4 Configuration



Options Summary		
Use This Device	Disable	
	Enable	Optimal Default, Failsafe Default
Enable or Disable this Logical Device.		
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=2F8h; IRQ=11	
	IO=3F8h; IRQ=11	
Allows user to change Device's Resource settings. New settings will be reflected on This Setup Page after System restarts.		
Mode:	RS232	Optimal Default, Failsafe Default
	RS422	
	RS485	
UART RS232, 422, 485 selection.		

3.4.9 Serial Port Console Redirection



Options Summary		
Console Redirection	Disabled	Optimal Default, Failsafe Default
	Enabled	
Console Redirection Enable or Disable.		
Console Redirection EMS	Disabled	Optimal Default, Failsafe Default
	Enabled	
Console Redirection Enable or Disable.		

3.4.10 Legacy Console Redirection Settings



Options Summary		
Redirection COM port	COM0	Optimal Default, Failsafe Default
	COM1(Pci Bus0, Dev0, Func0) (Disabled)	
Select a COM Port to display redirection of Legacy OS and Legacy OPRM message.		
Resolution	80x24	Optimal Default, Failsafe Default
	80x25	
On Legacy OS, the number of Rows and Columns supported redirection		
Redirect After POST	Always Enable	Optimal Default, Failsafe Default
	BootLoader	
When Bootloader is selected, then Legacy Console Redirection is disabled before booting to legacy OS. When Always Enable is selected, then Legacy Console Redirection is enabled for legacy OS. Default setting for this option is set to Always Enable.		

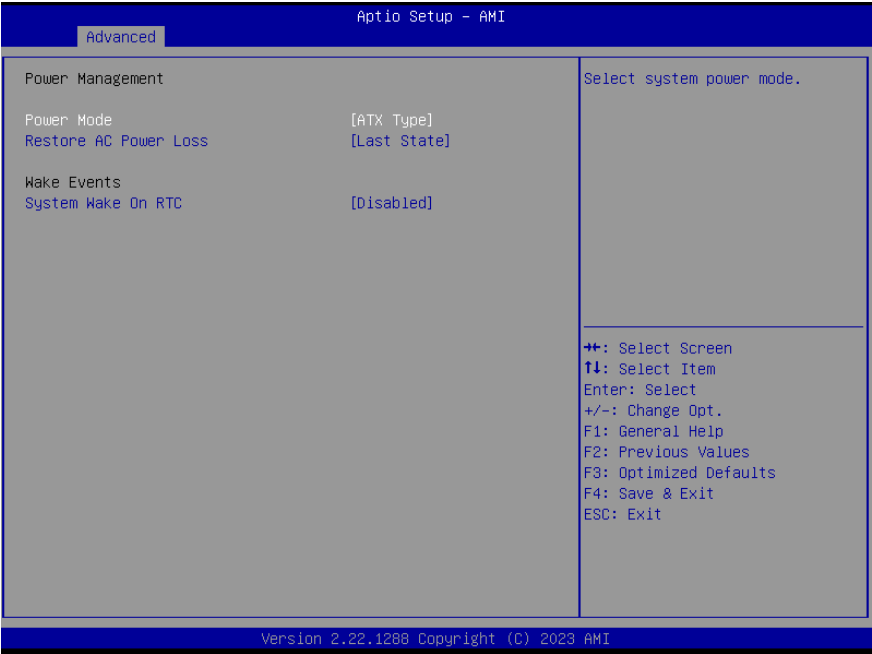
3.4.11 AAEON BIOS Robot



Options Summary		
Sends watch dog before BIOS POST	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enabled - Robot set Watch Dog Timer (WDT) right after power on, before BIOS start POST process. And then Robot will clear WDT on completion of POST. WDT will reset system automatically if it is not cleared before its timer counts down to zero.		
POST Timer (second)	30	Optimal Default, Failsafe Default
Timer count set to Watch Dog Timer for POST.		
WARNING: Do not set to a value equal or shorter than normal POST time, otherwise system may never complete POST unless clearing BIOS settings. More than 2x normal POST time is suggested.		
Sends watch dog before booting OS	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enabled - Robot set Watch Dog Timer (WDT) after POST completion, before BIOS transfer control to OS. WARNING: Before enabling this function, a program in OS must be in responsible for clearing WDT. Also, this function should be disabled if OS is going to update itself.		

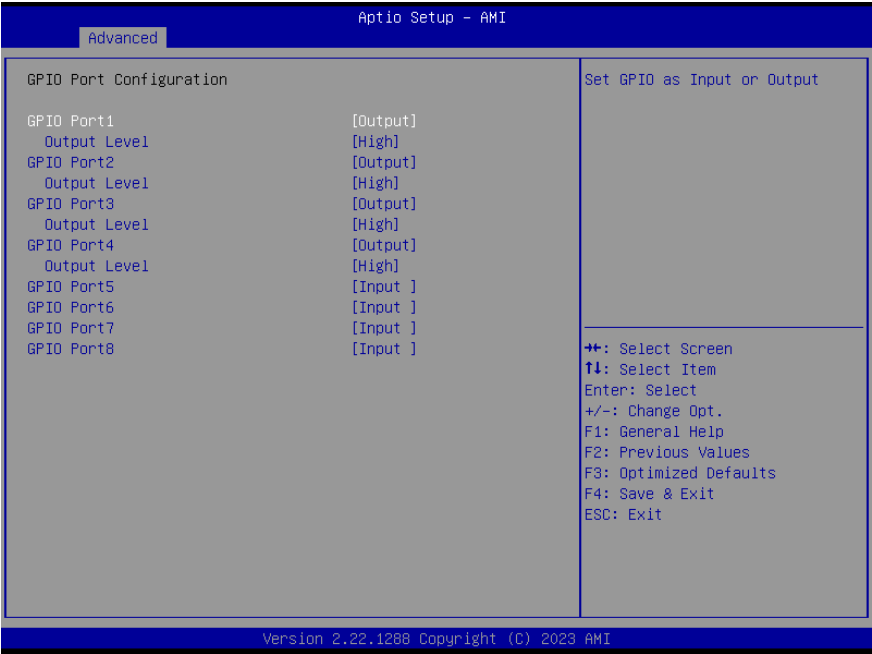
Options Summary		
OS Timer (minute)	3	Optimal Default, Failsafe Default
Timer count set to Watch Dog Timer for OS loading.		
Delayed POST (PEI phase)	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enabled - Robot holds BIOS from starting POST, right after power on. This allows BIOS POST to start with stable power or start after system is physically warmed-up. Note: Robot does this before 'Sends watch dog'.		
Delayed time (second)	10	Optimal Default, Failsafe Default
Period of time for Robot to hold BIOS from POST.		
Delayed POST (DXE phase)	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enabled - Robot holds BIOS before POST completion. This allows BIOS POST to start with stable power or start after system is physically warmed-up. Note: Robot does this after 'Sends watch dog before BIOS POST'.		
Delayed time (second)	10	Optimal Default, Failsafe Default
Period of time for Robot to hold BIOS from POST.		
Reset system once	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enabled - Robot resets system for one time on each boot. This will send a soft or hard reset to onboard devices, thus puts devices to more stable state.		
Soft or hard reset	Soft reset	Optimal Default, Failsafe Default
	Hard reset"	
Select reset type robot should send on each boot.		

3.4.12 Power Management



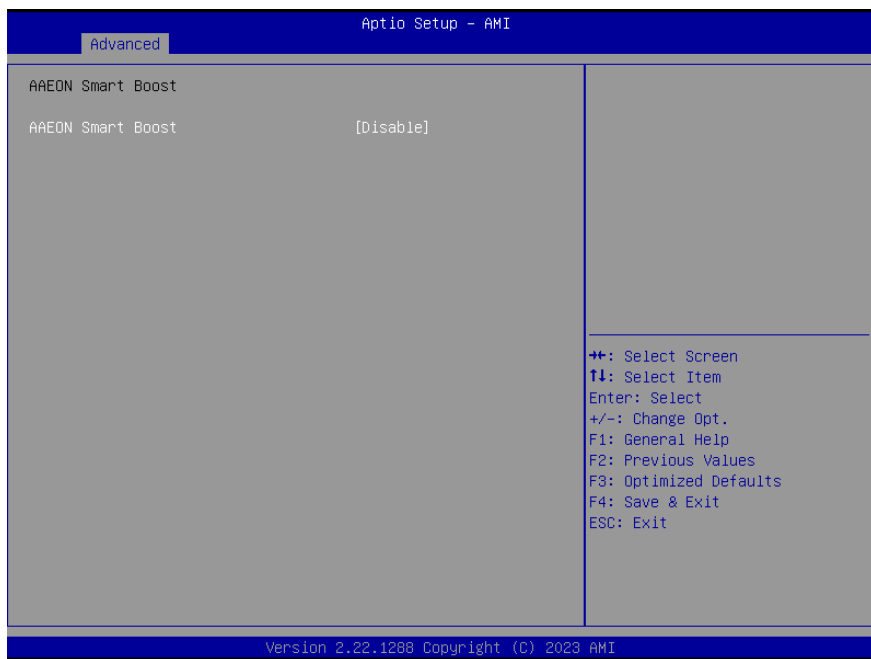
Options Summary		
Power Mode	ATX Type	Optimal Default, Failsafe Default
	AT Type	
Select power supply mode.		
Restore AC Power Loss	Last State	Optimal Default, Failsafe Default
	Always On	
	Always Off	
Select power state when power is re-applied after a power failure.		
System Wake On RTC	Disable	Optimal Default, Failsafe Default
	By Date	
	Bypass	
By Date: System will wake on the day with hr::min::sec specified./n By Weekday: System will wake on the enabled weekday with hr::min::sec specified./n Bypass: BIOS will not control RTC wake function.		

3.4.13 GPIO Port Configuration



Options Summary		
GDIO Port*	Output	
	Input	
Set GPIO as Input or Output.		
Output Level	High	
	Low	
Set output level when GDIO pin is output.		

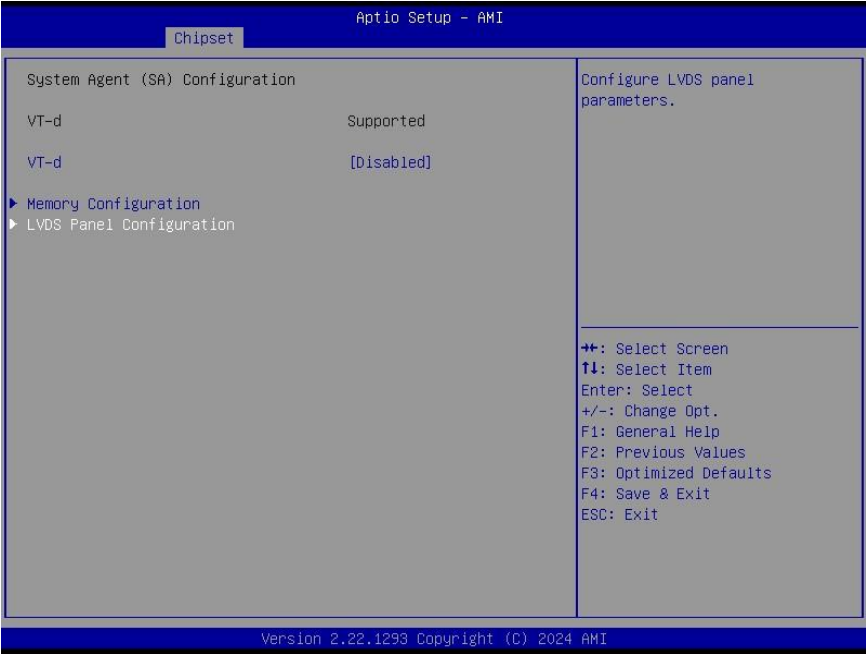
3.4.14 AAEON Smart Boost



3.5 Setup Submenu: Chipset

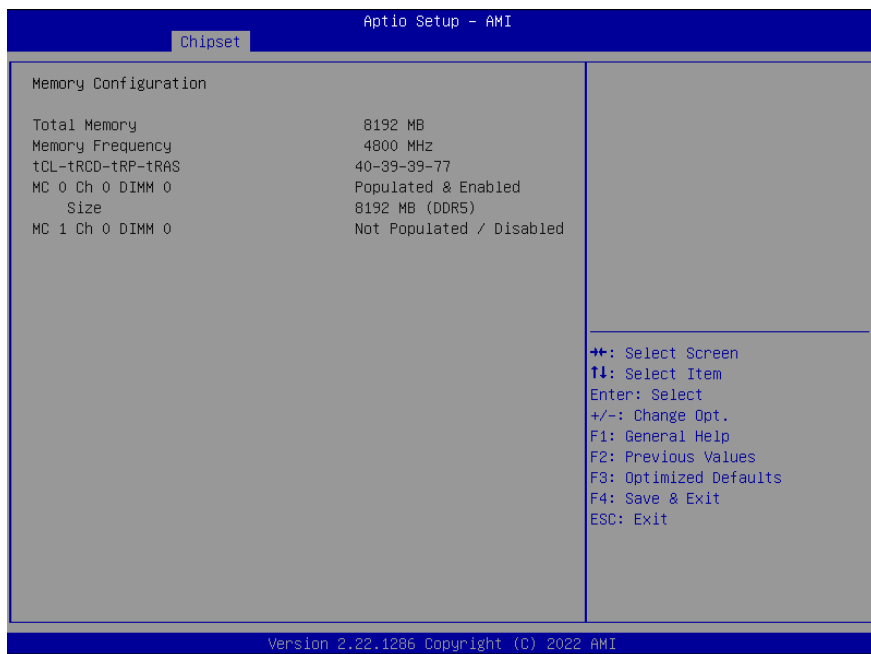


3.5.1 System Agent (SA) Configuration



Options Summary		
VT-d	Disabled	Optimal Default, Failsafe Default
	Enabled	
VT-d capability.		

3.5.2 Memory Configuration



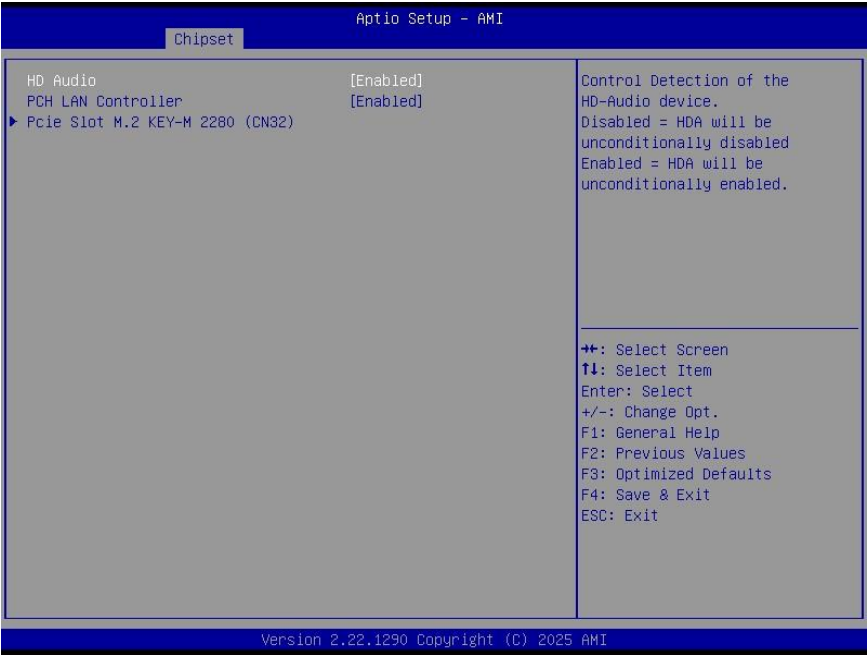
3.5.3 LVDS Panel Configuration



Options Summary		
LVDS	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable/Disabled this panel.		
LVDS Panel Type	640x480,60Hz	
	800x480, 60Hz	
	800x600, 60Hz	
	1024x600,60Hz	
	1024x768 ,60Hz	
	1024x768,60Hz	Optimal Default, Failsafe Default
	1280x768,60Hz	
	1280x1024,60Hz	
	1366x768,60Hz	
	1440x900,60Hz	
	1600x1200,60Hz	
	1920x1080,60Hz	
	1920x1200,60Hz	

Options Summary		
Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item.		
Panel Mode	Single channel	Optimal Default, Failsafe Default
	Dual channel	
Panel mode selection for Single channel and Dual channel		
Color Depth	18-bit	Optimal Default, Failsafe Default
	24-bit	
	36-bit	
	48-bit	
Select panel type		
Backlight Mode	Windows Slider	Optimal Default, Failsafe Default
	BIOS & Application	
Select backlight control signal type		

3.5.4 PCH-IO Configuration



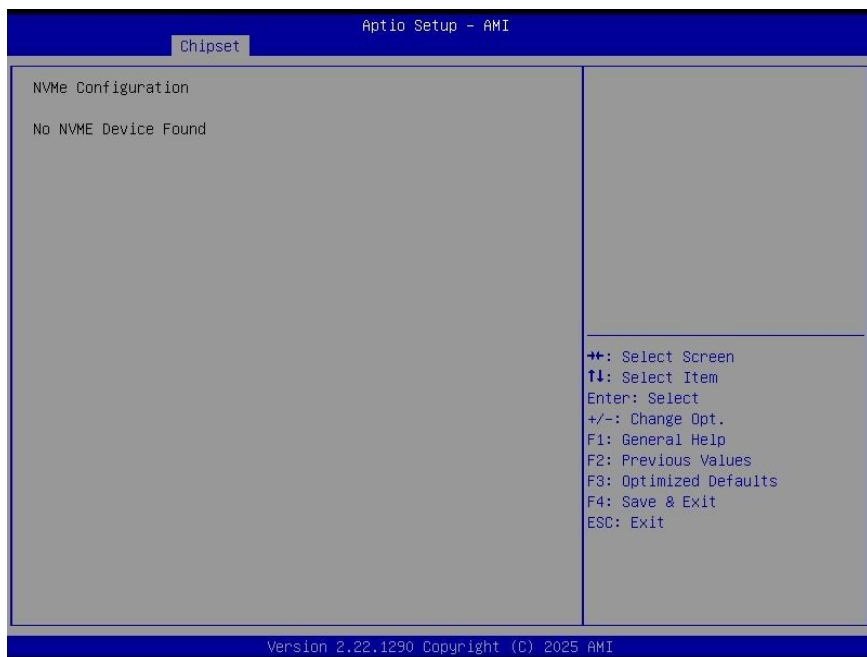
Options Summary		
HD Audio	Disabled	
	Enabled	Optimal Default, Failsafe Default
Control Detection of the HD-Audio Device. Disabled = HDA will unconditionally disabled Enabled = HDA will be unconditionally enabled.		
PCH LAN Controller	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable/Disable onboard NIC		

3.5.5 PCIe Slot M.2 2280 M-Key (CN32)



Options Summary		
PCI Express Root Port 5	Enabled	Optimal Default, Failsafe Default
	Disabled	
Control the PCI Express Root Port		
PCIe Speed	Auto	Optimal Default, Failsafe Default
	Gen 1	
	Gen 2	
	Gen 3	
	Gen 4	
Configure PCIe Speed		

3.5.6 NVMe Configuration



3.6 Setup Submenu: Security



Change User/Supervisor Password

You can install a Supervisor password, and if you install a supervisor password, you can then install a user password. A user password does not provide access to many of the features in the Setup utility.

If you highlight these items and press Enter, a dialog box appears which lets you enter a password. You can enter no more than six letters or numbers. Press Enter after you have typed in the password. A second dialog box asks you to retype the password for confirmation. Press Enter after you have retyped it correctly. The password is required at boot time, or when the user enters the Setup utility.

Removing the Password

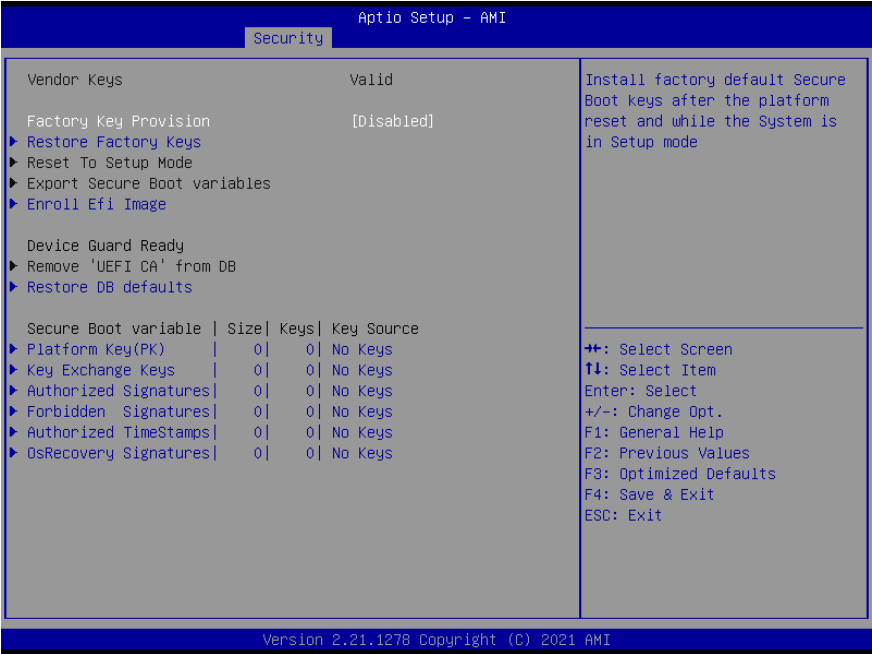
Highlight this item and type in the current password. At the next dialog box press Enter to disable password protection.

3.6.1 Secure Boot



Options Summary		
Secure Boot	Disabled	Optimal Default, Failsafe Default
	Enabled	
Secure Boot feature is Active if Secure Boot is Enabled, Platform Key (PK) is enrolled and the System is in User mode. The mode change requires platform reset.		
Secure Boot Mode	Custom	Optimal Default, Failsafe Default
	Standard	
Secure Boot mode options: Standard or Custom. In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication.		
Restore Factory Keys		
Force System to User Mode. Install factory default Secure Boot key databases.		
Reset to Setup Mode		
Delete all Secure Boot key databases from NVRAM.		

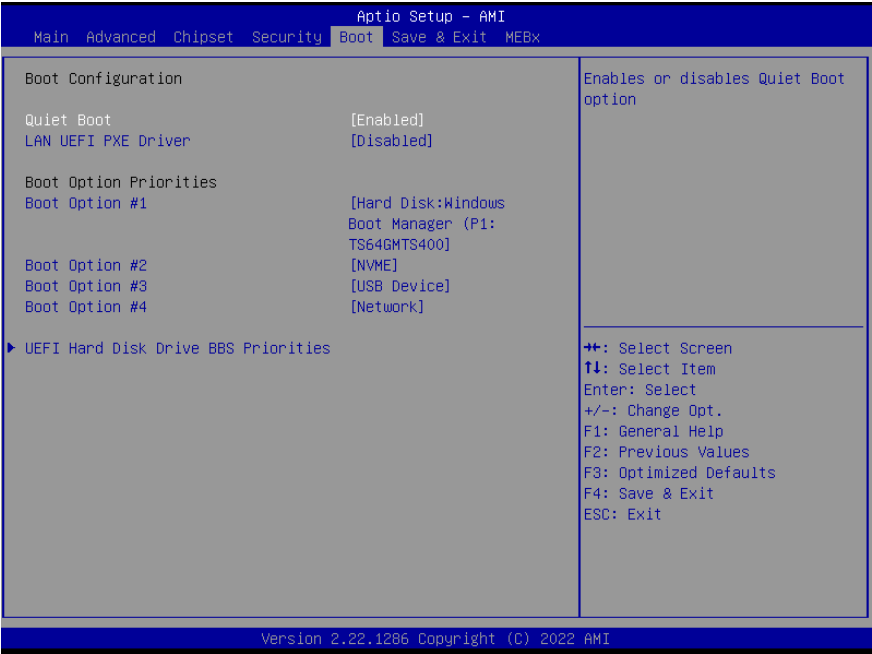
3.6.2 Key Management



Options Summary		
Factory Key Provision	Disabled	Optimal Default, Failsafe Default
	Enabled	
Secure Boot feature is Active if Secure Boot is Enabled, Platform Key (PK) is enrolled and the System is in User mode. The mode change requires platform reset.		
Restore Factory Keys		
Force System to User Mode. Install factory default Secure Boot key databases.		
Reset to Setup Mode		
Delete all Secure Boot key databases from NVRAM.		
Export Secure Boot variables		
Copy NVRAM content of Secure Boot variables to files in a root folder on a file system device.		
Enroll Efi Image		
Allow the image to run in Secure Boot mode. Enroll SHA256 Hash certificate of a PE image into Authorized Signature Database (db).		
Remove 'UEFI CA' from DB		

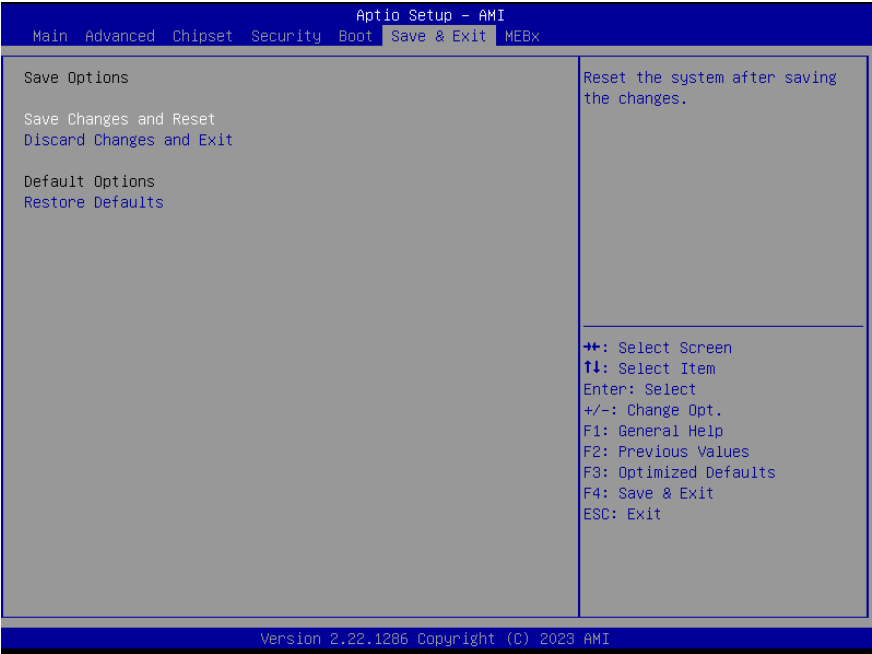
Options Summary	
Device Guard ready system must not list 'Microsoft UEFI CA' Certificate in Authorized Signature database (db).	
Restore DB defaults	
Restore DB variable to factory defaults.	
Platform Key (PK)	Details
	Export
	Update
	Delete
Key Exchange Keys	Details
	Export
	Update
	Append
	Delete
Authorized Signatures	Details
	Export
	Update
	Append
	Delete
Forbidden Signatures	Details
	Export
	Update
	Append
	Delete
Authorized TimeStamps	Update
	Append
OsRecovery Signatures	Update
	Append
Enroll Factory Defaults or load certificates from a file:	
1. Public Key Certificate:	
a) EFI_SIGNATURE_LIST.	
b) EFI_CERT_X509 (DER).	
c) EFI_CERT_RSA2048 (bin).	
d) EFI_CERT_SHAXXX.	
2. Authenticated UEFI Variable.	
3. EFI PE/COFF Image (SHA256).	
Key Source: Factory, External, Mixed.	

3.7 Setup Submenu: Boot



Options Summary		
Quiet Boot	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable Quiet Boot option.		
UEFI PXE Support	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable/Disable UEFI Network Stack.		
FIXED BOOT ORDER Priorities		
Sets the system boot order.		

3.8 Setup Submenu: Save & Exit



Options Summary	
Save Changes and Reset	Reset the system after saving the changes.
Discard Changes and Exit	Exit system setup without saving any changes.
Restore Defaults	Restore/Load Default values for all the setup options.

Chapter 4

Drivers Installation

4.1 Drivers Download and Installation

Drivers for the EPIC-RPS7 can be downloaded from the product page on the AAEON website by following this link:

<https://www.aaeon.com/en/>

Download the driver(s) you need and follow the steps below to install them.

Install Chipset Drivers

1. Open the **Chipset** folder
2. Open the **SetupChipset.exe** file
3. Follow the instructions
4. Drivers will be installed automatically

Install Graphics Driver

1. Open the **Graphics** folder
2. Open the **Installer.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

Install LAN Drivers

1. Open the **LAN** folder
2. Open the Setup Information file in the folder
3. Follow the instructions to manually install drivers

Install Serial I/O Driver

1. Open the **Serial I/O** folder
2. Open the **SetupSerialIO.exe** file
3. Follow the instructions
4. Drivers will be installed automatically

Install ME & TXE Driver Driver

1. Open the **ME & TXE Driver** folder
2. Open the **SetupME.exe** file
3. Follow the instructions
4. Drivers will be installed automatically

Appendix A

I/O Information

[illegible]

	[0000000000000040 - 0000000000000043]	System timer
	[0000000000000040 - 0000000000000043]	System timer
	[0000000000000040 - 0000000000000043]	System timer
	[0000000000000040 - 0000000000000043]	System timer
	[000000000000004E - 000000000000004F]	Motherboard resources
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000050 - 0000000000000053]	System timer
	[0000000000000060 - 0000000000000060]	Standard PS/2 Keyboard
	[0000000000000061 - 0000000000000061]	Motherboard resources
	[0000000000000063 - 0000000000000063]	Motherboard resources
	[0000000000000064 - 0000000000000064]	Standard PS/2 Keyboard
	[0000000000000065 - 0000000000000065]	Motherboard resources
	[0000000000000067 - 0000000000000067]	Motherboard resources
	[0000000000000070 - 0000000000000070]	Motherboard resources
	[0000000000000070 - 0000000000000077]	System CMOS/real time clock
	[0000000000000080 - 0000000000000080]	Motherboard resources
	[0000000000000092 - 0000000000000092]	Motherboard resources
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A0 - 00000000000000A1]	Programmable interrupt controller
	[00000000000000A4 - 00000000000000A5]	Programmable interrupt controller
	[00000000000000A4 - 00000000000000A5]	Programmable interrupt controller
	[00000000000000A4 - 00000000000000A5]	Programmable interrupt controller

	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000B8 - 00000000000000B9]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000000BC - 00000000000000BD]	Programmable interrupt controller
	[00000000000002E8 - 00000000000002EF]	Fintek Communications Port (COM4)
	[00000000000002F8 - 00000000000002FF]	Fintek Communications Port (COM2)
	[00000000000003E8 - 00000000000003EF]	Fintek Communications Port (COM3)
	[00000000000003F8 - 00000000000003FF]	Fintek Communications Port (COM1)
	[00000000000003F8 - 00000000000003FF]	Fintek Communications Port (COM1)
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[00000000000004D0 - 00000000000004D1]	Programmable interrupt controller
	[0000000000000680 - 000000000000069F]	Motherboard resources
	[0000000000000A00 - 0000000000000A0F]	Motherboard resources
	[0000000000000A10 - 0000000000000A1F]	Motherboard resources
	[0000000000000A20 - 0000000000000A2F]	Motherboard resources
	[0000000000000D00 - 000000000000FFFF]	PCI Express Simplex

	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000001854 - 0000000000001857]	Motherboard resources
	[0000000000002000 - 00000000000020FE]	Motherboard resources
	[0000000000003000 - 000000000000303F]	Intel(R) Iris(R) Xe Graphics
	[0000000000003000 - 000000000000303F]	Intel(R) UHD Graphics
	[0000000000003000 - 00000000000030FF]	Realtek PCIe GbE Family Controller
	[0000000000003000 - 0000000000003FFF]	PCI Express Root Port #9 - 54B0
	[0000000000003000 - 0000000000003FFF]	Intel(R) PCI Express Root Port #1 - 7AB8
	[0000000000003000 - 0000000000003FFF]	PCI Express Root Port
	[0000000000003060 - 000000000000307F]	Standard SATA AHCI Controller
	[0000000000003080 - 0000000000003083]	Standard SATA AHCI Controller
	[0000000000003090 - 0000000000003097]	Standard SATA AHCI Controller
	[0000000000004000 - 000000000000403F]	Intel(R) UHD Graphics
	[0000000000004000 - 000000000000403F]	Intel(R) UHD Graphics
	[0000000000004000 - 000000000000403F]	Intel(R) UHD Graphics 730
	[0000000000004000 - 000000000000403F]	Intel(R) UHD Graphics 770
	[0000000000004000 - 0000000000004FFF]	PCI Express Root Port
	[0000000000004060 - 000000000000407F]	Standard SATA AHCI Controller
	[0000000000004060 - 000000000000407F]	Standard SATA AHCI Controller
	[0000000000004080 - 0000000000004083]	Standard SATA AHCI Controller
	[0000000000004080 - 0000000000004083]	Standard SATA AHCI Controller
	[0000000000004090 - 0000000000004097]	Standard SATA AHCI Controller
	[0000000000004090 - 0000000000004097]	Standard SATA AHCI Controller
	[0000000000005000 - 000000000000503F]	Microsoft Basic Display Adapter
	[0000000000005060 - 000000000000507F]	Standard SATA AHCI Controller
	[0000000000005080 - 0000000000005083]	Standard SATA AHCI Controller
	[0000000000005090 - 0000000000005097]	Standard SATA AHCI Controller
	[000000000000E000 - 000000000000EFFF]	PCI Express Root Port

	[0000000000003000 - 0000000000003FFF]	PCI Express Root Port #9 - 54B0
	[0000000000003000 - 0000000000003FFF]	Intel(R) PCI Express Root Port #1 - 7AB8
	[0000000000003000 - 0000000000003FFF]	PCI Express Root Port
	[0000000000003060 - 000000000000307F]	Standard SATA AHCI Controller
	[0000000000003080 - 0000000000003083]	Standard SATA AHCI Controller
	[0000000000003090 - 0000000000003097]	Standard SATA AHCI Controller
	[0000000000004000 - 000000000000403F]	Intel(R) UHD Graphics
	[0000000000004000 - 000000000000403F]	Intel(R) UHD Graphics
	[0000000000004000 - 000000000000403F]	Intel(R) UHD Graphics 730
	[0000000000004000 - 000000000000403F]	Intel(R) UHD Graphics 770
	[0000000000004000 - 0000000000004FFF]	PCI Express Root Port
	[0000000000004060 - 000000000000407F]	Standard SATA AHCI Controller
	[0000000000004060 - 000000000000407F]	Standard SATA AHCI Controller
	[0000000000004080 - 0000000000004083]	Standard SATA AHCI Controller
	[0000000000004080 - 0000000000004083]	Standard SATA AHCI Controller
	[0000000000004090 - 0000000000004097]	Standard SATA AHCI Controller
	[0000000000004090 - 0000000000004097]	Standard SATA AHCI Controller
	[0000000000005000 - 000000000000503F]	Microsoft Basic Display Adapter
	[0000000000005060 - 000000000000507F]	Standard SATA AHCI Controller
	[0000000000005080 - 0000000000005083]	Standard SATA AHCI Controller
	[0000000000005090 - 0000000000005097]	Standard SATA AHCI Controller
	[000000000000E000 - 000000000000EFFF]	PCI Express Root Port
	[000000000000EFA0 - 000000000000EFBF]	SMBus - 54A3
	[000000000000EFA0 - 000000000000EFBF]	Intel(R) SMBus - 7AA3
	[000000000000EFA0 - 000000000000EFBF]	SM Bus Controller
	[000000000000EFA0 - 000000000000EFBF]	SM Bus Controller
	[000000000000F000 - 000000000000F03F]	Microsoft Basic Display Adapter
	[000000000000F040 - 000000000000F05F]	SM Bus Controller
	[000000000000F060 - 000000000000F07F]	Standard SATA AHCI Controller
	[000000000000F080 - 000000000000F083]	Standard SATA AHCI Controller
	[000000000000F090 - 000000000000F097]	Standard SATA AHCI Controller

A.2 Memory Address Map

▼		Large Memory
		[0000004000000000 - 0000007FFFFFFF] PCI Express Root Complex
▼		Memory
		[00000000000A0000 - 0000000000BFFFFF] PCI Express Root Complex
		[000000004F400000 - 000000004F4FFFFF] Intel(R) Ethernet Controller I226-LM #4
		[000000004F400000 - 000000004F5FFFFF] PCI Express Root Port
		[000000004F500000 - 000000004F503FFF] Intel(R) Ethernet Controller I226-LM #4
		[000000004F620000 - 000000004F621FFF] Standard SATA AHCI Controller
		[000000004F622000 - 000000004F6227FF] Standard SATA AHCI Controller
		[000000004F623000 - 000000004F6230FF] Standard SATA AHCI Controller
		[000000007FC00000 - 000000007FCFFFFF] PCI Express Root Port
		[000000007FD00000 - 000000007FDFFFFF] PCI Express Root Port
		[000000007FE00000 - 000000007FE01FFF] Standard SATA AHCI Controller
		[000000007FE02000 - 000000007FE027FF] Standard SATA AHCI Controller
		[000000007FE03000 - 000000007FE030FF] Standard SATA AHCI Controller
		[0000000080000000 - 000000008FFFFFFF] Microsoft Basic Display Adapter
		[0000000080400000 - 00000000804FFFFF] Intel(R) Ethernet Controller I226-V #2
		[0000000080400000 - 00000000804FFFFF] Intel(R) Ethernet Controller I226-V #7
		[0000000080400000 - 00000000805FFFFF] PCI Express Root Port #10 - 54B1
		[0000000080400000 - 00000000805FFFFF] PCI Express Root Port #3 - 54BA
		[0000000080400000 - 0000000080DFFFFF] PCI Express Root Port #9 - 54B0
		[0000000080400000 - 0000000080DFFFFF] Intel(R) PCI Express Root Port #1 - 7AB8
		[0000000080400000 - 00000000BFFFFFFF] PCI Express Root Complex
		[0000000080500000 - 0000000080503FFF] Intel(R) Ethernet Controller I226-V #2
		[0000000080500000 - 0000000080503FFF] Intel(R) Ethernet Controller I226-V #7
		[0000000080600000 - 0000000080603FFF] Realtek PCIe GbE Family Controller
		[0000000080600000 - 00000000806FFFFF] Intel(R) Ethernet Controller I226-V #3
		[0000000080604000 - 0000000080604FFF] Realtek PCIe GbE Family Controller
		[0000000080700000 - 0000000080703FFF] Intel(R) Ethernet Controller I226-V #3
		[0000000080800000 - 00000000808FFFFF] Intel(R) Ethernet Controller I226-V #6
		[0000000080800000 - 00000000809FFFFF] PCI Express Root Port #4 - 54BB
		[0000000080900000 - 0000000080903FFF] Intel(R) Ethernet Controller I226-V #6

	[000000004F400000 - 000000004F4FFFFF]	Intel(R) Ethernet Controller I226-LM #4
	[000000004F400000 - 000000004F5FFFFF]	PCI Express Root Port
	[000000004F500000 - 000000004F503FFF]	Intel(R) Ethernet Controller I226-LM #4
	[000000004F620000 - 000000004F621FFF]	Standard SATA AHCI Controller
	[000000004F622000 - 000000004F6227FF]	Standard SATA AHCI Controller
	[000000004F623000 - 000000004F6230FF]	Standard SATA AHCI Controller
	[000000007FC00000 - 000000007FCFFFFF]	PCI Express Root Port
	[000000007FD00000 - 000000007FDFFFFF]	PCI Express Root Port
	[000000007FE00000 - 000000007FE01FFF]	Standard SATA AHCI Controller
	[000000007FE02000 - 000000007FE027FF]	Standard SATA AHCI Controller
	[000000007FE03000 - 000000007FE030FF]	Standard SATA AHCI Controller
	[0000000080000000 - 000000008FFFFFFF]	Microsoft Basic Display Adapter
	[0000000080400000 - 00000000804FFFFF]	Intel(R) Ethernet Controller I226-V #2
	[0000000080400000 - 00000000804FFFFF]	Intel(R) Ethernet Controller I226-V #7
	[0000000080400000 - 00000000805FFFFF]	PCI Express Root Port #10 - 54B1
	[0000000080400000 - 00000000805FFFFF]	PCI Express Root Port #3 - 54BA
	[0000000080400000 - 0000000080DFFFFF]	PCI Express Root Port #9 - 54B0
	[0000000080400000 - 0000000080DFFFFF]	Intel(R) PCI Express Root Port #1 - 7AB8
	[0000000080400000 - 00000000BFFFFFFF]	PCI Express Root Complex
	[0000000080500000 - 0000000080503FFF]	Intel(R) Ethernet Controller I226-V #2
	[0000000080500000 - 0000000080503FFF]	Intel(R) Ethernet Controller I226-V #7
	[0000000080600000 - 0000000080603FFF]	Realtek PCIe GbE Family Controller
	[0000000080600000 - 00000000806FFFFF]	Intel(R) Ethernet Controller I226-V #3
	[0000000080604000 - 0000000080604FFF]	Realtek PCIe GbE Family Controller
	[0000000080700000 - 0000000080703FFF]	Intel(R) Ethernet Controller I226-V #3
	[0000000080800000 - 00000000808FFFFF]	Intel(R) Ethernet Controller I226-V #6
	[0000000080800000 - 00000000809FFFFF]	PCI Express Root Port #4 - 54BB
	[0000000080900000 - 0000000080903FFF]	Intel(R) Ethernet Controller I226-V #6
	[0000000080E00000 - 0000000080EFFFFF]	Intel(R) Ethernet Controller I226-V
	[0000000080E00000 - 0000000080EFFFFF]	Intel(R) Ethernet Controller I226-IT
	[0000000080E00000 - 0000000080EFFFFF]	Intel(R) Ethernet Controller I226-LM #5
	[0000000080E00000 - 0000000080EFFFFF]	PCI Express Root Port #10 - 54B1
	[0000000080E00000 - 0000000080EFFFFF]	Intel(R) PCI Express Root Port #4 - 7ABB
	[0000000080E00000 - 0000000080EFFFFF]	Intel(R) PCI Express Root Port #8 - 7ABF

[0000000080E00000 - 0000000080FFFFFF]	Intel(R) PCI Express Root Port #8 - 7ABF
[0000000080E00000 - 0000000080FFFFFF]	PCI-to-PCI Bridge
[0000000080F00000 - 0000000080F03FFF]	Intel(R) Ethernet Controller I226-V
[0000000080F00000 - 0000000080F03FFF]	Intel(R) Ethernet Controller I226-IT
[0000000080F00000 - 0000000080F03FFF]	Intel(R) Ethernet Controller I226-LM #5
[0000000081000000 - 0000000081003FFF]	Standard NVM Express Controller
[0000000081000000 - 000000008101FFFF]	Intel(R) Ethernet Connection (17) I219-LM
[0000000081000000 - 00000000810FFFFF]	Intel(R) Ethernet Controller I226-IT #2
[0000000081000000 - 00000000810FFFFF]	PCI-to-PCI Bridge
[0000000081000000 - 00000000811FFFFF]	PCI Express Root Port #7 - 54BE
[0000000081000000 - 00000000811FFFFF]	Intel(R) PCI Express Root Port #22 - 7AC5
[0000000081020000 - 0000000081021FFF]	Standard SATA AHCI Controller
[0000000081022000 - 00000000810227FF]	Standard SATA AHCI Controller
[0000000081023000 - 00000000810230FF]	Standard SATA AHCI Controller
[0000000081100000 - 0000000081103FFF]	Intel(R) Ethernet Controller I226-IT #2
[0000000081200000 - 0000000081201FFF]	Standard SATA AHCI Controller
[0000000081200000 - 00000000812FFFFF]	Intel(R) Ethernet Controller I226-IT #3
[0000000081200000 - 00000000813FFFFF]	PCI Express Root Port #4 - 54BB
[0000000081200000 - 00000000813FFFFF]	Intel(R) PCI Express Root Port #21 - 7AC4
[0000000081202000 - 00000000812027FF]	Standard SATA AHCI Controller
[0000000081203000 - 00000000812030FF]	Standard SATA AHCI Controller
[0000000081220000 - 0000000081223FFF]	Standard NVM Express Controller
[0000000081300000 - 0000000081303FFF]	Intel(R) Ethernet Controller I226-IT #3
[0000000090000000 - 0000000090FFFFFF]	Microsoft Basic Display Adapter
[0000000091000000 - 00000000910FFFFF]	High Definition Audio Controller
[0000000091100000 - 00000000911FFFFF]	PCI Express Root Port
[0000000091200000 - 000000009120FFFF]	Intel(R) USB 3.0 eXtensible Host Controller - 1.0 (Microsoft)
[0000000091210000 - 0000000091213FFF]	High Definition Audio Controller
[0000000091214000 - 0000000091215FFF]	Standard SATA AHCI Controller
[0000000091216000 - 00000000912160FF]	SM Bus Controller
[0000000091217000 - 0000000091217FFF]	Intel(R) Serial IO I2C Host Controller - 5AAE
[0000000091218000 - 0000000091218FFF]	Intel(R) Serial IO I2C Host Controller - 5AAE
[0000000091219000 - 0000000091219FFF]	Intel(R) Serial IO I2C Host Controller - 5AAC
[000000009121A000 - 000000009121AFFF]	Intel(R) Serial IO I2C Host Controller - 5AAC

[000000009121A000 - 000000009121AFFF]	Intel(R) Serial IO I2C Host Controller - 5AAC
[000000009121B000 - 000000009121B7FF]	Standard SATA AHCI Controller
[000000009121C000 - 000000009121C0FF]	Standard SATA AHCI Controller
[000000009121F000 - 000000009121FFFF]	PCI Simple Communications Controller
[00000000C0000000 - 00000000CFFFFFFF]	Motherboard resources
[00000000D0C00000 - 00000000D0C00653]	Intel(R) Serial IO GPIO Host Controller - INT3452
[00000000D0C40000 - 00000000D0C40763]	Intel(R) Serial IO GPIO Host Controller - INT3452
[00000000D0C50000 - 00000000D0C5076B]	Intel(R) Serial IO GPIO Host Controller - INT3452
[00000000D0C70000 - 00000000D0C70763]	Intel(R) Serial IO GPIO Host Controller - INT3452
[00000000E0690000 - 00000000E069FFFF]	Intel(R) Serial IO GPIO Host Controller - INTC1056
[00000000E06A0000 - 00000000E06AFFFF]	Intel(R) Serial IO GPIO Host Controller - INTC1056
[00000000E06B0000 - 00000000E06BFFFF]	Intel(R) Serial IO GPIO Host Controller - INTC1056
[00000000E06D0000 - 00000000E06DFFFF]	Intel(R) Serial IO GPIO Host Controller - INTC1056
[00000000E06E0000 - 00000000E06EFFFF]	Intel(R) Serial IO GPIO Host Controller - INTC1056
[00000000FD000000 - 00000000FD68FFFF]	Motherboard resources
[00000000FD690000 - 00000000FD69FFFF]	Unknown device
[00000000FD690000 - 00000000FD69FFFF]	Unknown device
[00000000FD690000 - 00000000FD69FFFF]	Unknown device
[00000000FD6A0000 - 00000000FD6AFFFF]	Unknown device
[00000000FD6A0000 - 00000000FD6AFFFF]	Unknown device
[00000000FD6A0000 - 00000000FD6AFFFF]	Unknown device
[00000000FD6B0000 - 00000000FD6BFFFF]	Unknown device
[00000000FD6B0000 - 00000000FD6CFFFF]	Motherboard resources
[00000000FD6C0000 - 00000000FD6CFFFF]	Unknown device
[00000000FD6D0000 - 00000000FD6DFFFF]	Unknown device
[00000000FD6D0000 - 00000000FD6DFFFF]	Unknown device
[00000000FD6D0000 - 00000000FD6DFFFF]	Unknown device
[00000000FD6E0000 - 00000000FD6EFFFF]	Unknown device
[00000000FD6E0000 - 00000000FD6EFFFF]	Unknown device
[00000000FD6E0000 - 00000000FD6EFFFF]	Unknown device
[00000000FD6F0000 - 00000000FDFFFFFF]	Motherboard resources
[00000000FE000000 - 00000000FE01FFFF]	Motherboard resources
[00000000FE010000 - 00000000FE010FFF]	SPI (flash) Controller - 54A4
[00000000FE010000 - 00000000FE010FFF]	Intel(R) SPI (flash) Controller - 7AA4

	[00000000FE010000 - 00000000FE010FFF] Intel(R) SPI (flash) Controller - 7AA4
	[00000000FE010000 - 00000000FE010FFF] PCI Device
	[00000000FE010000 - 00000000FE010FFF] PCI Device
	[00000000FE050000 - 00000000FE053FFF] Intel(R) Platform Services Engine DMA Controller
	[00000000FE060000 - 00000000FE063FFF] Intel(R) Platform Services Engine DMA Controller
	[00000000FE200000 - 00000000FE7FFFFF] Motherboard resources
	[00000000FED00000 - 00000000FED003FF] High precision event timer
	[00000000FED20000 - 00000000FED7FFFF] Motherboard resources
	[00000000FED40000 - 00000000FED44FFF] Trusted Platform Module 2.0
	[00000000FED45000 - 00000000FED8FFFF] Motherboard resources
	[00000000FED90000 - 00000000FED93FFF] Motherboard resources
	[00000000FEDA0000 - 00000000FEDA0FFF] Motherboard resources
	[00000000FEDA1000 - 00000000FEDA1FFF] Motherboard resources
	[00000000FEDC0000 - 00000000FEDC7FFF] Motherboard resources
	[00000000FEE00000 - 00000000FEEFFFFF] Motherboard resources
	[00000000FF000000 - 00000000FFFFFFFF] Motherboard resources
	[0000004000000000 - 000000400FFFFFFF] Intel(R) Iris(R) Xe Graphics
	[0000004000000000 - 000000400FFFFFFF] Intel(R) UHD Graphics
	[0000004000000000 - 000000400FFFFFFF] Intel(R) UHD Graphics
	[0000004000000000 - 000000400FFFFFFF] Intel(R) UHD Graphics 730
	[0000004000000000 - 000000400FFFFFFF] Intel(R) UHD Graphics 770
	[0000004000000000 - 000000400FFFFFFF] Microsoft Basic Display Adapter
	[0000006000000000 - 00000060009FFFFF] PCI Express Root Port #9 - 54B0
	[0000006000000000 - 00000060009FFFFF] Intel(R) PCI Express Root Port #1 - 7AB8
	[0000006000000000 - 0000006000FFFFFF] Intel(R) Iris(R) Xe Graphics
	[0000006000000000 - 0000006000FFFFFF] Intel(R) UHD Graphics
	[0000006000000000 - 0000006000FFFFFF] Microsoft Basic Display Adapter
	[0000006001000000 - 0000006001FFFFFF] Intel(R) UHD Graphics
	[0000006001000000 - 0000006001FFFFFF] Intel(R) UHD Graphics
	[0000006001000000 - 0000006001FFFFFF] Intel(R) UHD Graphics 730
	[0000006001000000 - 0000006001FFFFFF] Intel(R) UHD Graphics 770
	[0000006001300000 - 000000600130FFFF] Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
	[0000006001318000 - 00000060013180FF] SM Bus Controller

	[00000000FF000000 - 00000000FFFFFFFF] Motherboard resources
	[0000004000000000 - 000000400FFFFFFFF] Intel(R) Iris(R) Xe Graphics
	[0000004000000000 - 000000400FFFFFFFF] Intel(R) UHD Graphics
	[0000004000000000 - 000000400FFFFFFFF] Intel(R) UHD Graphics
	[0000004000000000 - 000000400FFFFFFFF] Intel(R) UHD Graphics
	[0000004000000000 - 000000400FFFFFFFF] Intel(R) UHD Graphics 730
	[0000004000000000 - 000000400FFFFFFFF] Intel(R) UHD Graphics 770
	[0000004000000000 - 000000400FFFFFFFF] Microsoft Basic Display Adapter
	[0000006000000000 - 00000060009FFFFFF] PCI Express Root Port #9 - 54B0
	[0000006000000000 - 00000060009FFFFFF] Intel(R) PCI Express Root Port #1 - 7AB8
	[0000006000000000 - 00000060009FFFFFF] Intel(R) Iris(R) Xe Graphics
	[0000006000000000 - 00000060009FFFFFF] Intel(R) UHD Graphics
	[0000006000000000 - 00000060009FFFFFF] Microsoft Basic Display Adapter
	[0000006001000000 - 0000006001FFFFFF] Intel(R) UHD Graphics
	[0000006001000000 - 0000006001FFFFFF] Intel(R) UHD Graphics
	[0000006001000000 - 0000006001FFFFFF] Intel(R) UHD Graphics 730
	[0000006001000000 - 0000006001FFFFFF] Intel(R) UHD Graphics 770
	[0000006001300000 - 000000600130FFFF] Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
	[0000006001318000 - 00000060013180FF] SM Bus Controller
	[0000006001320000 - 000000600132FFFF] Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
	[000000600133E000 - 000000600133E0FF] SM Bus Controller
	[000000600133F000 - 000000600133FFFF] Intel SD Host Controller
	[0000006001341000 - 0000006001341FFF] PCI Device
	[0000006001342000 - 0000006001342FFF] PCI Device
	[0000006002100000 - 000000600210FFFF] Intel(R) USB 3.10 eXtensible Host Controller - 1.20 (Microsoft)
	[0000006002100000 - 000000600210FFFF] Intel(R) USB 3.20 eXtensible Host Controller - 1.20 (Microsoft)
	[0000006002110000 - 0000006002117FFF] Intel(R) Platform Monitoring Technology Driver
	[0000006002118000 - 00000060021180FF] Intel(R) SMBus - 7AA3
	[0000006002128000 - 00000060021280FF] SMBus - 54A3
	[0000007FFFEF9000 - 0000007FFFEF9FFF] Intel(R) Management Engine Interface #1
	[0000007FFFEFA000 - 0000007FFFEFAFFF] Intel(R) Serial IO I2C Host Controller - 7ACC
	[0000007FFFEFB000 - 0000007FFFEFBFFF] Intel(R) Serial IO I2C Host Controller - 7AFC
	[0000007FFFEFC000 - 0000007FFFEFCFFF] High Definition Audio Controller
	[0000007FFFEFD000 - 0000007FFFEFDFFF] High Definition Audio Controller

A.3 IRQ Mapping Chart

Interrupt request (IRQ)		
	(ISA) 0x00000000 (00)	System timer
	(ISA) 0x00000000 (00)	System timer
	(ISA) 0x00000000 (00)	System timer
	(ISA) 0x00000000 (00)	System timer
	(ISA) 0x00000000 (00)	System timer
	(ISA) 0x00000000 (00)	System timer
	(ISA) 0x00000000 (00)	System timer
	(ISA) 0x00000000 (00)	System timer
	(ISA) 0x00000000 (00)	System timer
	(ISA) 0x00000001 (01)	Standard PS/2 Keyboard
	(ISA) 0x00000003 (03)	Fintek Communications Port (COM2)
	(ISA) 0x00000004 (04)	Fintek Communications Port (COM1)
	(ISA) 0x00000004 (04)	Fintek Communications Port (COM1)
	(ISA) 0x0000000B (11)	Fintek Communications Port (COM3)
	(ISA) 0x0000000B (11)	Fintek Communications Port (COM4)
	(ISA) 0x0000000C (12)	PS/2 Compatible Mouse
	(ISA) 0x0000000E (14)	Intel(R) Serial IO GPIO Host Controller - INTC1056
	(ISA) 0x0000000E (14)	Intel(R) Serial IO GPIO Host Controller - INT3452
	(ISA) 0x0000000E (14)	Intel(R) Serial IO GPIO Host Controller - INT3452
	(ISA) 0x0000000E (14)	Intel(R) Serial IO GPIO Host Controller - INT3452
	(ISA) 0x0000000E (14)	Intel(R) Serial IO GPIO Host Controller - INT3452
	(ISA) 0x0000000E (14)	Unknown device
	(ISA) 0x0000000E (14)	Unknown device
	(ISA) 0x0000000E (14)	Unknown device
	(ISA) 0x00000011 (17)	Intel(R) USB 3.0 eXtensible Host Controller - 1.0 (Microsoft)
	(ISA) 0x00000019 (25)	High Definition Audio Controller
	(ISA) 0x0000001B (27)	Intel(R) Serial IO I2C Host Controller - 5AAC
	(ISA) 0x0000001C (28)	Intel(R) Serial IO I2C Host Controller - 5AAE
	(ISA) 0x00000023 (35)	Intel(R) Platform Services Engine DMA Controller
	(ISA) 0x00000024 (36)	Intel(R) Platform Services Engine DMA Controller
	(ISA) 0x00000037 (55)	Microsoft ACPI-Compliant System
	(ISA) 0x00000038 (56)	Microsoft ACPI-Compliant System
	(ISA) 0x00000039 (57)	Microsoft ACPI-Compliant System
	(ISA) 0x0000003A (58)	Microsoft ACPI-Compliant System

	(ISA) 0x0000003D (61)	Microsoft ACPI-Compliant System
	(ISA) 0x0000003E (62)	Microsoft ACPI-Compliant System
	(ISA) 0x0000003F (63)	Microsoft ACPI-Compliant System
	(ISA) 0x00000040 (64)	Microsoft ACPI-Compliant System
	(ISA) 0x00000041 (65)	Microsoft ACPI-Compliant System
	(ISA) 0x00000042 (66)	Microsoft ACPI-Compliant System
	(ISA) 0x00000043 (67)	Microsoft ACPI-Compliant System
	(ISA) 0x00000044 (68)	Microsoft ACPI-Compliant System
	(ISA) 0x00000045 (69)	Microsoft ACPI-Compliant System
	(ISA) 0x00000046 (70)	Microsoft ACPI-Compliant System
	(ISA) 0x00000047 (71)	Microsoft ACPI-Compliant System
	(ISA) 0x00000048 (72)	Microsoft ACPI-Compliant System
	(ISA) 0x00000049 (73)	Microsoft ACPI-Compliant System
	(ISA) 0x0000004A (74)	Microsoft ACPI-Compliant System
	(ISA) 0x0000004B (75)	Microsoft ACPI-Compliant System
	(ISA) 0x0000004C (76)	Microsoft ACPI-Compliant System
	(ISA) 0x0000004D (77)	Microsoft ACPI-Compliant System
	(ISA) 0x0000004E (78)	Microsoft ACPI-Compliant System
	(ISA) 0x0000004F (79)	Microsoft ACPI-Compliant System
	(ISA) 0x00000050 (80)	Microsoft ACPI-Compliant System
	(ISA) 0x00000051 (81)	Microsoft ACPI-Compliant System
	(ISA) 0x00000052 (82)	Microsoft ACPI-Compliant System
	(ISA) 0x00000053 (83)	Microsoft ACPI-Compliant System
	(ISA) 0x00000054 (84)	Microsoft ACPI-Compliant System
	(ISA) 0x00000055 (85)	Microsoft ACPI-Compliant System
	(ISA) 0x00000056 (86)	Microsoft ACPI-Compliant System
	(ISA) 0x00000057 (87)	Microsoft ACPI-Compliant System
	(ISA) 0x00000058 (88)	Microsoft ACPI-Compliant System
	(ISA) 0x00000059 (89)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005A (90)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005B (91)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005C (92)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005D (93)	Microsoft ACPI-Compliant System
	(ISA) 0x0000005E (94)	Microsoft ACPI-Compliant System

	(ISA) 0x00000061 (97)	Microsoft ACPI-Compliant System
	(ISA) 0x00000062 (98)	Microsoft ACPI-Compliant System
	(ISA) 0x00000063 (99)	Microsoft ACPI-Compliant System
	(ISA) 0x00000064 (100)	Microsoft ACPI-Compliant System
	(ISA) 0x00000065 (101)	Microsoft ACPI-Compliant System
	(ISA) 0x00000066 (102)	Microsoft ACPI-Compliant System
	(ISA) 0x00000067 (103)	Microsoft ACPI-Compliant System
	(ISA) 0x00000068 (104)	Microsoft ACPI-Compliant System
	(ISA) 0x00000069 (105)	Microsoft ACPI-Compliant System
	(ISA) 0x0000006A (106)	Microsoft ACPI-Compliant System
	(ISA) 0x0000006B (107)	Microsoft ACPI-Compliant System
	(ISA) 0x0000006C (108)	Microsoft ACPI-Compliant System
	(ISA) 0x0000006D (109)	Microsoft ACPI-Compliant System
	(ISA) 0x0000006D (109)	Trusted Platform Module 2.0
	(ISA) 0x0000006E (110)	Microsoft ACPI-Compliant System
	(ISA) 0x0000006F (111)	Microsoft ACPI-Compliant System
	(ISA) 0x00000070 (112)	Microsoft ACPI-Compliant System
	(ISA) 0x00000071 (113)	Microsoft ACPI-Compliant System
	(ISA) 0x00000072 (114)	Microsoft ACPI-Compliant System
	(ISA) 0x00000073 (115)	Microsoft ACPI-Compliant System
	(ISA) 0x00000074 (116)	Microsoft ACPI-Compliant System
	(ISA) 0x00000075 (117)	Microsoft ACPI-Compliant System
	(ISA) 0x00000076 (118)	Microsoft ACPI-Compliant System
	(ISA) 0x00000077 (119)	Microsoft ACPI-Compliant System
	(ISA) 0x00000078 (120)	Microsoft ACPI-Compliant System
	(ISA) 0x00000079 (121)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007A (122)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007B (123)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007C (124)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007D (125)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007E (126)	Microsoft ACPI-Compliant System
	(ISA) 0x0000007F (127)	Microsoft ACPI-Compliant System
	(ISA) 0x00000080 (128)	Microsoft ACPI-Compliant System
	(ISA) 0x00000081 (129)	Microsoft ACPI-Compliant System

	(ISA) 0x00000084 (132)	Microsoft ACPI-Compliant System
	(ISA) 0x00000085 (133)	Microsoft ACPI-Compliant System
	(ISA) 0x00000086 (134)	Microsoft ACPI-Compliant System
	(ISA) 0x00000087 (135)	Microsoft ACPI-Compliant System
	(ISA) 0x00000088 (136)	Microsoft ACPI-Compliant System
	(ISA) 0x00000089 (137)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008A (138)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008B (139)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008C (140)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008D (141)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008E (142)	Microsoft ACPI-Compliant System
	(ISA) 0x0000008F (143)	Microsoft ACPI-Compliant System
	(ISA) 0x00000090 (144)	Microsoft ACPI-Compliant System
	(ISA) 0x00000091 (145)	Microsoft ACPI-Compliant System
	(ISA) 0x00000092 (146)	Microsoft ACPI-Compliant System
	(ISA) 0x00000093 (147)	Microsoft ACPI-Compliant System
	(ISA) 0x00000094 (148)	Microsoft ACPI-Compliant System
	(ISA) 0x00000095 (149)	Microsoft ACPI-Compliant System
	(ISA) 0x00000096 (150)	Microsoft ACPI-Compliant System
	(ISA) 0x00000097 (151)	Microsoft ACPI-Compliant System
	(ISA) 0x00000098 (152)	Microsoft ACPI-Compliant System
	(ISA) 0x00000099 (153)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009A (154)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009B (155)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009C (156)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009D (157)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009E (158)	Microsoft ACPI-Compliant System
	(ISA) 0x0000009F (159)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A0 (160)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A1 (161)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A2 (162)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A3 (163)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A4 (164)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A5 (165)	Microsoft ACPI-Compliant System

	(ISA) 0x000000A8 (168)	Microsoft ACPI-Compliant System
	(ISA) 0x000000A9 (169)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AA (170)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AB (171)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AC (172)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AD (173)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AE (174)	Microsoft ACPI-Compliant System
	(ISA) 0x000000AF (175)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B0 (176)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B1 (177)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B2 (178)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B3 (179)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B4 (180)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B5 (181)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B6 (182)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B7 (183)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B8 (184)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B9 (185)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BA (186)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BB (187)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BC (188)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BD (189)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BE (190)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BF (191)	Microsoft ACPI-Compliant System
	(ISA) 0x000000C0 (192)	Microsoft ACPI-Compliant System
	(ISA) 0x000000C1 (193)	Microsoft ACPI-Compliant System
	(ISA) 0x000000C2 (194)	Microsoft ACPI-Compliant System
	(ISA) 0x000000C3 (195)	Microsoft ACPI-Compliant System
	(ISA) 0x000000C4 (196)	Microsoft ACPI-Compliant System
	(ISA) 0x000000C5 (197)	Microsoft ACPI-Compliant System
	(ISA) 0x000000C6 (198)	Microsoft ACPI-Compliant System
	(ISA) 0x000000C7 (199)	Microsoft ACPI-Compliant System
	(ISA) 0x000000C8 (200)	Microsoft ACPI-Compliant System
	(ISA) 0x000000C9 (201)	Microsoft ACPI-Compliant System
—		

 (ISA) 0x000000CC (204)	Microsoft ACPI-Compliant System
 (ISA) 0x00000100 (256)	Microsoft ACPI-Compliant System
 (ISA) 0x00000101 (257)	Microsoft ACPI-Compliant System
 (ISA) 0x00000102 (258)	Microsoft ACPI-Compliant System
 (ISA) 0x00000103 (259)	Microsoft ACPI-Compliant System
 (ISA) 0x00000104 (260)	Microsoft ACPI-Compliant System
 (ISA) 0x00000105 (261)	Microsoft ACPI-Compliant System
 (ISA) 0x00000106 (262)	Microsoft ACPI-Compliant System
 (ISA) 0x00000107 (263)	Microsoft ACPI-Compliant System
 (ISA) 0x00000108 (264)	Microsoft ACPI-Compliant System
 (ISA) 0x00000109 (265)	Microsoft ACPI-Compliant System
 (ISA) 0x0000010A (266)	Microsoft ACPI-Compliant System
 (ISA) 0x0000010B (267)	Microsoft ACPI-Compliant System
 (ISA) 0x0000010C (268)	Microsoft ACPI-Compliant System
 (ISA) 0x0000010D (269)	Microsoft ACPI-Compliant System
 (ISA) 0x0000010E (270)	Microsoft ACPI-Compliant System
 (ISA) 0x0000010F (271)	Microsoft ACPI-Compliant System
 (ISA) 0x00000110 (272)	Microsoft ACPI-Compliant System
 (ISA) 0x00000111 (273)	Microsoft ACPI-Compliant System
 (ISA) 0x00000112 (274)	Microsoft ACPI-Compliant System
 (ISA) 0x00000113 (275)	Microsoft ACPI-Compliant System
 (ISA) 0x00000114 (276)	Microsoft ACPI-Compliant System
 (ISA) 0x00000115 (277)	Microsoft ACPI-Compliant System
 (ISA) 0x00000116 (278)	Microsoft ACPI-Compliant System
 (ISA) 0x00000117 (279)	Microsoft ACPI-Compliant System
 (ISA) 0x00000118 (280)	Microsoft ACPI-Compliant System
 (ISA) 0x00000119 (281)	Microsoft ACPI-Compliant System
 (ISA) 0x0000011A (282)	Microsoft ACPI-Compliant System
 (ISA) 0x0000011B (283)	Microsoft ACPI-Compliant System
 (ISA) 0x0000011C (284)	Microsoft ACPI-Compliant System
 (ISA) 0x0000011D (285)	Microsoft ACPI-Compliant System
 (ISA) 0x0000011E (286)	Microsoft ACPI-Compliant System
 (ISA) 0x0000011F (287)	Microsoft ACPI-Compliant System
 (ISA) 0x00000120 (288)	Microsoft ACPI-Compliant System

	(ISA) 0x00000123 (291)	Microsoft ACPI-Compliant System
	(ISA) 0x00000124 (292)	Microsoft ACPI-Compliant System
	(ISA) 0x00000125 (293)	Microsoft ACPI-Compliant System
	(ISA) 0x00000126 (294)	Microsoft ACPI-Compliant System
	(ISA) 0x00000127 (295)	Microsoft ACPI-Compliant System
	(ISA) 0x00000128 (296)	Microsoft ACPI-Compliant System
	(ISA) 0x00000129 (297)	Microsoft ACPI-Compliant System
	(ISA) 0x0000012A (298)	Microsoft ACPI-Compliant System
	(ISA) 0x0000012B (299)	Microsoft ACPI-Compliant System
	(ISA) 0x0000012C (300)	Microsoft ACPI-Compliant System
	(ISA) 0x0000012D (301)	Microsoft ACPI-Compliant System
	(ISA) 0x0000012E (302)	Microsoft ACPI-Compliant System
	(ISA) 0x0000012F (303)	Microsoft ACPI-Compliant System
	(ISA) 0x00000130 (304)	Microsoft ACPI-Compliant System
	(ISA) 0x00000131 (305)	Microsoft ACPI-Compliant System
	(ISA) 0x00000132 (306)	Microsoft ACPI-Compliant System
	(ISA) 0x00000133 (307)	Microsoft ACPI-Compliant System
	(ISA) 0x00000134 (308)	Microsoft ACPI-Compliant System
	(ISA) 0x00000135 (309)	Microsoft ACPI-Compliant System
	(ISA) 0x00000136 (310)	Microsoft ACPI-Compliant System
	(ISA) 0x00000137 (311)	Microsoft ACPI-Compliant System
	(ISA) 0x00000138 (312)	Microsoft ACPI-Compliant System
	(ISA) 0x00000139 (313)	Microsoft ACPI-Compliant System
	(ISA) 0x0000013A (314)	Microsoft ACPI-Compliant System
	(ISA) 0x0000013B (315)	Microsoft ACPI-Compliant System
	(ISA) 0x0000013C (316)	Microsoft ACPI-Compliant System
	(ISA) 0x0000013D (317)	Microsoft ACPI-Compliant System
	(ISA) 0x0000013E (318)	Microsoft ACPI-Compliant System
	(ISA) 0x0000013F (319)	Microsoft ACPI-Compliant System
	(ISA) 0x00000140 (320)	Microsoft ACPI-Compliant System
	(ISA) 0x00000141 (321)	Microsoft ACPI-Compliant System
	(ISA) 0x00000142 (322)	Microsoft ACPI-Compliant System
	(ISA) 0x00000143 (323)	Microsoft ACPI-Compliant System
	(ISA) 0x00000144 (324)	Microsoft ACPI-Compliant System

	(ISA) 0x00000147 (327)	Microsoft ACPI-Compliant System
	(ISA) 0x00000148 (328)	Microsoft ACPI-Compliant System
	(ISA) 0x00000149 (329)	Microsoft ACPI-Compliant System
	(ISA) 0x0000014A (330)	Microsoft ACPI-Compliant System
	(ISA) 0x0000014B (331)	Microsoft ACPI-Compliant System
	(ISA) 0x0000014C (332)	Microsoft ACPI-Compliant System
	(ISA) 0x0000014D (333)	Microsoft ACPI-Compliant System
	(ISA) 0x0000014E (334)	Microsoft ACPI-Compliant System
	(ISA) 0x0000014F (335)	Microsoft ACPI-Compliant System
	(ISA) 0x00000150 (336)	Microsoft ACPI-Compliant System
	(ISA) 0x00000151 (337)	Microsoft ACPI-Compliant System
	(ISA) 0x00000152 (338)	Microsoft ACPI-Compliant System
	(ISA) 0x00000153 (339)	Microsoft ACPI-Compliant System
	(ISA) 0x00000154 (340)	Microsoft ACPI-Compliant System
	(ISA) 0x00000155 (341)	Microsoft ACPI-Compliant System
	(ISA) 0x00000156 (342)	Microsoft ACPI-Compliant System
	(ISA) 0x00000157 (343)	Microsoft ACPI-Compliant System
	(ISA) 0x00000158 (344)	Microsoft ACPI-Compliant System
	(ISA) 0x00000159 (345)	Microsoft ACPI-Compliant System
	(ISA) 0x0000015A (346)	Microsoft ACPI-Compliant System
	(ISA) 0x0000015B (347)	Microsoft ACPI-Compliant System
	(ISA) 0x0000015C (348)	Microsoft ACPI-Compliant System
	(ISA) 0x0000015D (349)	Microsoft ACPI-Compliant System
	(ISA) 0x0000015E (350)	Microsoft ACPI-Compliant System
	(ISA) 0x0000015F (351)	Microsoft ACPI-Compliant System
	(ISA) 0x00000160 (352)	Microsoft ACPI-Compliant System
	(ISA) 0x00000161 (353)	Microsoft ACPI-Compliant System
	(ISA) 0x00000162 (354)	Microsoft ACPI-Compliant System
	(ISA) 0x00000163 (355)	Microsoft ACPI-Compliant System
	(ISA) 0x00000164 (356)	Microsoft ACPI-Compliant System
	(ISA) 0x00000165 (357)	Microsoft ACPI-Compliant System
	(ISA) 0x00000166 (358)	Microsoft ACPI-Compliant System
	(ISA) 0x00000167 (359)	Microsoft ACPI-Compliant System
	(ISA) 0x00000168 (360)	Microsoft ACPI-Compliant System

	(ISA) 0x0000016B (363)	Microsoft ACPI-Compliant System
	(ISA) 0x0000016C (364)	Microsoft ACPI-Compliant System
	(ISA) 0x0000016D (365)	Microsoft ACPI-Compliant System
	(ISA) 0x0000016E (366)	Microsoft ACPI-Compliant System
	(ISA) 0x0000016F (367)	Microsoft ACPI-Compliant System
	(ISA) 0x00000170 (368)	Microsoft ACPI-Compliant System
	(ISA) 0x00000171 (369)	Microsoft ACPI-Compliant System
	(ISA) 0x00000172 (370)	Microsoft ACPI-Compliant System
	(ISA) 0x00000173 (371)	Microsoft ACPI-Compliant System
	(ISA) 0x00000174 (372)	Microsoft ACPI-Compliant System
	(ISA) 0x00000175 (373)	Microsoft ACPI-Compliant System
	(ISA) 0x00000176 (374)	Microsoft ACPI-Compliant System
	(ISA) 0x00000177 (375)	Microsoft ACPI-Compliant System
	(ISA) 0x00000178 (376)	Microsoft ACPI-Compliant System
	(ISA) 0x00000179 (377)	Microsoft ACPI-Compliant System
	(ISA) 0x0000017A (378)	Microsoft ACPI-Compliant System
	(ISA) 0x0000017B (379)	Microsoft ACPI-Compliant System
	(ISA) 0x0000017C (380)	Microsoft ACPI-Compliant System
	(ISA) 0x0000017D (381)	Microsoft ACPI-Compliant System
	(ISA) 0x0000017E (382)	Microsoft ACPI-Compliant System
	(ISA) 0x0000017F (383)	Microsoft ACPI-Compliant System
	(ISA) 0x00000180 (384)	Microsoft ACPI-Compliant System
	(ISA) 0x00000181 (385)	Microsoft ACPI-Compliant System
	(ISA) 0x00000182 (386)	Microsoft ACPI-Compliant System
	(ISA) 0x00000183 (387)	Microsoft ACPI-Compliant System
	(ISA) 0x00000184 (388)	Microsoft ACPI-Compliant System
	(ISA) 0x00000185 (389)	Microsoft ACPI-Compliant System
	(ISA) 0x00000186 (390)	Microsoft ACPI-Compliant System
	(ISA) 0x00000187 (391)	Microsoft ACPI-Compliant System
	(ISA) 0x00000188 (392)	Microsoft ACPI-Compliant System
	(ISA) 0x00000189 (393)	Microsoft ACPI-Compliant System
	(ISA) 0x0000018A (394)	Microsoft ACPI-Compliant System
	(ISA) 0x0000018B (395)	Microsoft ACPI-Compliant System
	(ISA) 0x0000018C (396)	Microsoft ACPI-Compliant System

	(ISA) 0x0000018F (399)	Microsoft ACPI-Compliant System
	(ISA) 0x00000190 (400)	Microsoft ACPI-Compliant System
	(ISA) 0x00000191 (401)	Microsoft ACPI-Compliant System
	(ISA) 0x00000192 (402)	Microsoft ACPI-Compliant System
	(ISA) 0x00000193 (403)	Microsoft ACPI-Compliant System
	(ISA) 0x00000194 (404)	Microsoft ACPI-Compliant System
	(ISA) 0x00000195 (405)	Microsoft ACPI-Compliant System
	(ISA) 0x00000196 (406)	Microsoft ACPI-Compliant System
	(ISA) 0x00000197 (407)	Microsoft ACPI-Compliant System
	(ISA) 0x00000198 (408)	Microsoft ACPI-Compliant System
	(ISA) 0x00000199 (409)	Microsoft ACPI-Compliant System
	(ISA) 0x0000019A (410)	Microsoft ACPI-Compliant System
	(ISA) 0x0000019B (411)	Microsoft ACPI-Compliant System
	(ISA) 0x0000019C (412)	Microsoft ACPI-Compliant System
	(ISA) 0x0000019D (413)	Microsoft ACPI-Compliant System
	(ISA) 0x0000019E (414)	Microsoft ACPI-Compliant System
	(ISA) 0x0000019F (415)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A0 (416)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A1 (417)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A2 (418)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A3 (419)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A4 (420)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A5 (421)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A6 (422)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A7 (423)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A8 (424)	Microsoft ACPI-Compliant System
	(ISA) 0x000001A9 (425)	Microsoft ACPI-Compliant System
	(ISA) 0x000001AA (426)	Microsoft ACPI-Compliant System
	(ISA) 0x000001AB (427)	Microsoft ACPI-Compliant System
	(ISA) 0x000001AC (428)	Microsoft ACPI-Compliant System
	(ISA) 0x000001AD (429)	Microsoft ACPI-Compliant System
	(ISA) 0x000001AE (430)	Microsoft ACPI-Compliant System
	(ISA) 0x000001AF (431)	Microsoft ACPI-Compliant System
	(ISA) 0x000001B0 (432)	Microsoft ACPI-Compliant System

 (ISA) 0x000001B3 (435)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B4 (436)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B5 (437)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B6 (438)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B7 (439)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B8 (440)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B9 (441)	Microsoft ACPI-Compliant System
 (ISA) 0x000001BA (442)	Microsoft ACPI-Compliant System
 (ISA) 0x000001BB (443)	Microsoft ACPI-Compliant System
 (ISA) 0x000001BC (444)	Microsoft ACPI-Compliant System
 (ISA) 0x000001BD (445)	Microsoft ACPI-Compliant System
 (ISA) 0x000001BE (446)	Microsoft ACPI-Compliant System
 (ISA) 0x000001BF (447)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C0 (448)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C1 (449)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C2 (450)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C3 (451)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C4 (452)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C5 (453)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C6 (454)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C7 (455)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C8 (456)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C9 (457)	Microsoft ACPI-Compliant System
 (ISA) 0x000001CA (458)	Microsoft ACPI-Compliant System
 (ISA) 0x000001CB (459)	Microsoft ACPI-Compliant System
 (ISA) 0x000001CC (460)	Microsoft ACPI-Compliant System
 (ISA) 0x000001CD (461)	Microsoft ACPI-Compliant System
 (ISA) 0x000001CE (462)	Microsoft ACPI-Compliant System
 (ISA) 0x000001CF (463)	Microsoft ACPI-Compliant System
 (ISA) 0x000001D0 (464)	Microsoft ACPI-Compliant System
 (ISA) 0x000001D1 (465)	Microsoft ACPI-Compliant System
 (ISA) 0x000001D2 (466)	Microsoft ACPI-Compliant System
 (ISA) 0x000001D3 (467)	Microsoft ACPI-Compliant System
 (ISA) 0x000001D4 (468)	Microsoft ACPI-Compliant System

	(ISA) 0x000001D7 (471)	Microsoft ACPI-Compliant System
	(ISA) 0x000001D8 (472)	Microsoft ACPI-Compliant System
	(ISA) 0x000001D9 (473)	Microsoft ACPI-Compliant System
	(ISA) 0x000001DA (474)	Microsoft ACPI-Compliant System
	(ISA) 0x000001DB (475)	Microsoft ACPI-Compliant System
	(ISA) 0x000001DC (476)	Microsoft ACPI-Compliant System
	(ISA) 0x000001DD (477)	Microsoft ACPI-Compliant System
	(ISA) 0x000001DE (478)	Microsoft ACPI-Compliant System
	(ISA) 0x000001DF (479)	Microsoft ACPI-Compliant System
	(ISA) 0x000001E0 (480)	Microsoft ACPI-Compliant System
	(ISA) 0x000001E1 (481)	Microsoft ACPI-Compliant System
	(ISA) 0x000001E2 (482)	Microsoft ACPI-Compliant System
	(ISA) 0x000001E3 (483)	Microsoft ACPI-Compliant System
	(ISA) 0x000001E4 (484)	Microsoft ACPI-Compliant System
	(ISA) 0x000001E5 (485)	Microsoft ACPI-Compliant System
	(ISA) 0x000001E6 (486)	Microsoft ACPI-Compliant System
	(ISA) 0x000001E7 (487)	Microsoft ACPI-Compliant System
	(ISA) 0x000001E8 (488)	Microsoft ACPI-Compliant System
	(ISA) 0x000001E9 (489)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EA (490)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EB (491)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EC (492)	Microsoft ACPI-Compliant System
	(ISA) 0x000001ED (493)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EE (494)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EF (495)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F0 (496)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F1 (497)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F2 (498)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F3 (499)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F4 (500)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F5 (501)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F6 (502)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F7 (503)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F8 (504)	Microsoft ACPI-Compliant System

	(ISA) 0x000001ED (493)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EE (494)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EF (495)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F0 (496)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F1 (497)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F2 (498)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F3 (499)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F4 (500)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F5 (501)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F6 (502)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F7 (503)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F8 (504)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F9 (505)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FA (506)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FB (507)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FC (508)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FD (509)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FE (510)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FF (511)	Microsoft ACPI-Compliant System
	(PCI) 0x00000011 (17)	High Definition Audio Controller
	(PCI) 0x0000001B (27)	Intel(R) Serial IO I2C Host Controller - 7ACC
	(PCI) 0x0000001F (31)	Intel(R) Serial IO I2C Host Controller - 7AFC
	(PCI) 0xFFFFFFFF5 (-11)	Intel(R) Management Engine Interface #1
	(PCI) 0xFFFFFFFF6 (-10)	Intel(R) Ethernet Controller I226-V
	(PCI) 0xFFFFFFFF7 (-9)	Intel(R) Ethernet Controller I226-V
	(PCI) 0xFFFFFFFF8 (-8)	Intel(R) Ethernet Controller I226-V
	(PCI) 0xFFFFFFFF9 (-7)	Intel(R) Ethernet Controller I226-V
	(PCI) 0xFFFFFFFFA (-6)	Intel(R) Ethernet Controller I226-V
	(PCI) 0xFFFFFFFFB (-5)	Intel(R) USB 3.20 eXtensible Host Controller - 1.20 (Microsoft)
	(PCI) 0xFFFFFFFFC (-4)	Intel(R) UHD Graphics 730
	(PCI) 0xFFFFFFFFD (-3)	Intel(R) Ethernet Connection (17) I219-LM
	(PCI) 0xFFFFFFFFE (-2)	Standard SATA AHCI Controller

Appendix B

Mating Connectors

B.1 List of Mating Connectors and Cables

Label	Function	Mating Connector		Available Cable	Cable P/N
		Vendor	Model no		
CN1	External +5VSB Power Input and PS_ON#	JST	XHP-3	ATX Cable for External +5VSB Power Input and PS_ON#	170220020B
CN2	4x2 DC Vin Conn	Molex	39-01-2085	4x2 DC in Power Cable	170X001025
CN3	SATA Conn	Molex	887505318	SATA Cable	170X000593
CN4	SATA Power Conn	JST	PHR-2	2 Pins for HDD Power	1702150155
CN5	SATA Power Conn	JST	PHR-2	2 Pins for HDD Power	1702150155
CN6	SATA Conn	Molex	887505318	SATA Cable	170X000593
CN7	External RTC Conn	Molex	51021-0200	Battery Cable	175011901C
CN12	LVDS Backlight	JST	SHR-06V-S-B	LVDS Inverter Cable	N/A
CN14	USB 2.0 Conn	Hirose	KW30-4P-1C(800)	USB2.0 Cable	170X000880
CN15	CPU Fan Conn	Molex	470541000	N/A	N/A
CN16	GPIO Conn	ACES	50247-010H0H0-001	N/A	N/A
CN17	USB 2.0 Conn	Hirose	KW30-4P-1C(800)	USB2.0 Cable	170X000880
CN18	USB 2.0 Conn	Hirose	KW30-4P-1C(800)	USB2.0 Cable	170X000880
CN19	USB 2.0 Conn	Hirose	KW30-4P-1C(800)	USB2.0 Cable	170X000880
CN22	Front Panel Conn	JST	SHR-10V-S-B	Front Panel	170X000603
CN24	LVDS Conn	Hirose	DF13-30DS-1.25C	N/A	N/A
CN25	VGA	Molex	510211300	VGA Cable	170X000715
CN26	I2C/SMBus	JST	SHR-05V-S-B	N/A	N/A
CN30	Debug Conn	JST	SHR-10V-S-B	N/A	N/A
CN34	COM Port Conn	JST	SHDR-20V-S-B	Serial Port Cable	170X000231
CN35	COM Port Conn	JST	SHDR-20V-S-B	Serial Port Cable	170X000231

Appendix C

3-Pin ATX Behavior Description

C.1 3-Pin ATX Behavior Description

For board level power design, the EPIC-TGH7 supports the 3-Pin ATX Power Scheme, and there are 3 scenarios.

Single Input Power Source – AT mode

In AT Mode, the hardware design supports the "Auto Power Button: Enable" feature.

Case 1:

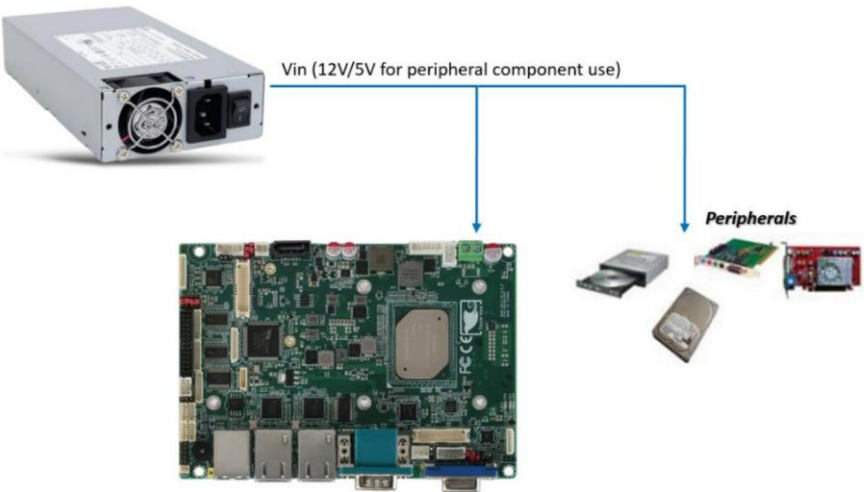
When the power supply or power adapter is powered on, the system will boot up. If the PWRBTN# is manually triggered to turn off the computer, only the system will power down. The power source will continue to supply power to peripherals, such as the cooler, SATA drive, USB ports, etc.

Case 2:

When the power supply or power adapter is powered on, the system will boot up. If the power source is manually turned off, the system will shut down completely. In this case, the power source will not supply power to the peripherals, ensuring the entire system is powered off.

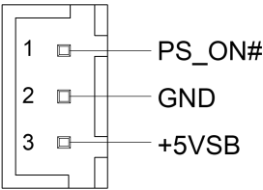
Single Input Power Source – ATX mode

Operating in “ATX mode”, wherein the H/W auto power button sets: disable, you must manually trigger the power button signal in order to power up or turn off the system. In this mode, when the power supply or power source is “powered”, manually trigger the PWRBTN# signal to turn on or shut down the system. However, this only turns off the system, while the power source continues to supply power to the peripherals, such as cooler, SATA drive, USB ports, etc



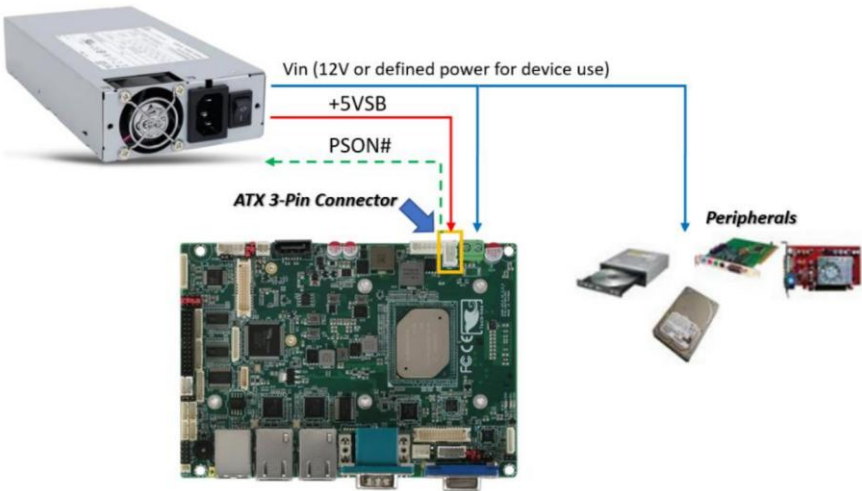
12V Input Power with 3-pin ATX External Connector

Operating in “ATX mode”, manually triggering PWRBTN# is necessary to power up or shut down the system. All peripherals are powered by the S-rail powers, and S-rail powers (such as +12V and +5V), so they will power on or off with the power source.



Pin	Pin Name	Signal Type	Signal Level
1	PS_ON#	OUT	+5V
2	GND	GND	
3	+5VSB	PWR	+5V (2A)

The 3-pin ATX External Connector



C.2 ATX Power Table

Type		Power Supply Unit / Turn On	Power Supply Unit / Turn Off
Single Input Power Source - AT Mode	SBC Mainboard	Powered	No Power
	External Peripherals	Powered	Powered
Single Input Power Source - ATX Mode	SBC Mainboard	Powered	No Power
	External Peripherals	Powered	Powered
12V Input Power with 3-pin ATX External Connector	SBC Mainboard	Powered	No Power
	External Peripherals	Powered	No Power